

"No. 19,932. Veronica peregrina L.
Low spots on the plain or valley
flat.

"No. 19,933. Lythrum hyssopifolia L.
Cor. purple. Low spots, below
general level of the valley flat,
forming a pure colony of one-
fourth acre.

"No. 19,934. Polypogon monspeliensis (L.) Desf.
This grass on the valley
flat.

"No. 19,935. Hemizonia congesta DC.
Valley flat.

"No. 19,936. Juncus phaeocephalus Engelm.
Var. paniculatus Engelm.
Low spot on
the flats.

"No. 19,937. Phalaris paradoxa L.
This grass on the
valley flat.

No. 19,938. *Agoseris grandiflora*
2 mi. nw. of Tiburon.

No. 19,939. *Vicia*

Cor. purple. Wings about as long as banner. Keel a little shorter than wings, its tips black-purple. Banner petal with a "claw" as broad as the lamina, a little contracted beneath the lamina. Lamina emarginate! Calyx membranous, villous, its teeth subulate, the upper pair the shorter.

Growing in dense thickets on a bank, $1\frac{1}{2}$ to 5 feet high by

— Swiss Creek, at bridge, just north of Basalt Hill (e. of Cordelia), along creek bank, the following species:

— *Rhus diversiloba*. *Acer macrophyllum*. *Asclepias californica*. *Baccharis pilularis*. *Symphoricarpos racemosus*. These notes belong with the trip of May 10, 1940. See vol. 59, p. 245.

aid of its tendrils on other plants. Tiburon, 2 mi. nw., in an area about 80 yards long.

No. 19,940. *Bellardia trixago* (L.) All.
With 19,939.

No. 19,941. *Lotus subpinnatus* Lag.
Clay bank. Herbage whitish. Cor. yellow. With 19,939.

Itinerary: Left Berkeley at 9:30, drove to Richmond (see p. 26), botanized on the flats, went on to the San Rafael Ferry. On the Marin shore took the road to Tiburon.

— Vaca Mts. It is remarkable how few shrub species are found in the *Arceuthobium* hills! and yet so many low on the lower slopes and cañons of the Vaca Mts. at altitudes well within the range of possible altitudes in the *Arceuthobium* hills. For example *Eriodictyon californicum* grows in Gates Cañon, outermost slopes (within $\frac{1}{2}$ mile from Vaca Valley floor) at 320 feet! — Cont. from vol. 59, p. 245.

At Tiburon village the hill-slopes rise somewhat steeply north of the railway yards. From this point the hill is brown with ^{one sees that} dead dry grass and ^{it} seems not worth a visit, but on climbing the hill the scene presents a different ^{aspect}. Above the Catholic Church the slope is rocky with outcropping ledges or broken strata. The dry grassy slope is now a veritable garden of flowers which have come into flower since the spring grass died. Everywhere, rising out of the brown grass, are thousands of golden cups of *Calochortus* *luteus*, the light panicles of *Chlorogalum pumilum*, and the delicate flowers of *Linum congestum*. *Eriogonum nudum* is in full flower while the fine heads of *Eriophyllum* (No. 19, 942)

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make golden spots in unvalued abundance. *Echeveria* is just in bud, *Lomatium dasycarpum* is in mature fruit and *Achillea millefolium* in flowers. ^{*Protocela laxa* (no. 19, 947)} Also a *Convolvulus*. It is an agreeable scene and the peace and gentleness of a sunny day adds to the pleasure of this excursion. I number my collections as follows:

Cont. from vol. 59, p. 259 at *.
I explained why it was necessary to reduce it. With a sober manner, Gilman said: "Shame on you"! I laughed. Gilman inquired about the name *Lappula redavskii*. I explained that this binomial is based on a central Asian plant; that most botanists ^{have} regarded the West American plant as the same species or as a variety (Gray, Watson). I. M. Johnston regards it as the same species. My research assistant, Dr. R. F. Hoover said simply: "There is no Asian material for comparison."
— Cont. middle p. 266 —

- ✓ No. 19,942. *Eriophyllum*
25 ft. Rocky hill slopes, very showy
- ✓ No. 19,943. *Lathyrus latifolius* L.
50 ft. Cor. crimson. Forming
extensive colonies on the steep
slopes ns. of railroad yards.
There is no doubt about its being
spontaneous and well established.
It has spread up the hill

- Cont. from bottom p. 265. That ended
it for him. He took the legalistic
stand, "nolle prosequi."

But I, myself, could
not take such a stand. I had to
make a decision and so I accept
Lappula redowskii for our Cal.
plant but with the mental
reservation that such acceptance
is contingent upon further evidence.
Gilman listened to all this and said: "You
use the name but you got your fingers
crossed!"

Not until this trip have I
- Cont. middle p. 267 -

- a hundred yards and forms dense
and rather extensive colonies over
4 or 5 acres of wild rough hillsides.
- No. 19,944. *Castilleja neglecta* Zide
100 ft. Cor. scarcely exceeding calyx.
Bracts green, its 3 lobes pink.
Calyx cleft more deeply before
than behind, making 2 segments right
and left: one of these segments is shallowly

met Gilman (cf. vol. 59, p. 154). My
enjoyment of him has been very
great - a natural simple direct-
unaffected man who cares so much
for his botany that other subjects
he will not touch. The federal govern-
ment through its Civilian Conservation
Corps and Works Progress Administration
is spending money here in ways so
foolish and wildly extravagant as
to outrage the decent men or practi-
cal men. One of these men at the
mess-hall table where I ate, a
keen old pioneer of a Texas type,
- Cont. middle p. 268 -

2-lobed, the other segment is shallowly 3-lobed, the 3 lobes are equal but the sinuses are markedly unequal!

Corolla: lower lip of 3 short green teeth, truncatish teeth; the gulf is green with a marked pink border (membranous) on each side, each border with a longitudinal

— Cont. from bottom p. 267. —

spoke to Gilman of the waste and added briskly: "That pipe line will be lined with silver and gold." Gilman was unmoved. He takes no concern about such things. He goes right on with his own work - helping everyone interested in the native plants and pays no attention to government. I imagine from his general temper he would regard interference as futile and so why bother, why think about it. I had

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groove, the edge of the membrane tubular-revolvent! All this represents a very curious structure and I have not noted it in any other *Castilleja*. Calyx greenish-yellow, finely glandular-pubescent. The lobes as described represent an unusual state. I redesign. ^{on pp. 267-8 ante} Segments right and left deeply 2-lobed, the sinuses

Cont. from bottom of p. 268.

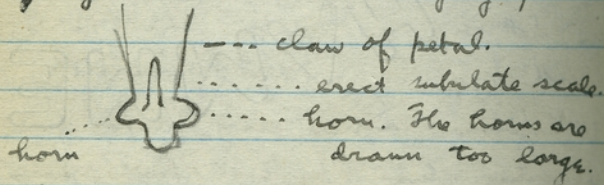
little idea of Gilman before meeting him. I knew he had been in the Forest Service. My only notion was perhaps unfavorable in that he sent me small and imperfect plants for determination - somewhat scrappy material. But I always answered his letters and did the best I could by him. In the Panamint in Apr. 1940 Gilman noticed my device for macerating stems a bit to prevent breakage in sending when placed in folder. His rather careless habits had never included any such detailed care so that, — careless in preparation I mean.

almost as deep as the sinuses
 fore and aft between segments.
 Lobes obtuse ^{truncatish}. The
 membranous ^{for} border of upper
 lip has a longitudinal groove,
 its margin (as to lower part)
 with a revolute-tubular border.

Rocky outcrops, on hill slope n. of
 Tiburon village. Perhaps it were better to
 say of the membranous: a longitudinal ridge,
 betw. 2 grooves and the edge revolute!!

No. 19,945. *Cryptantha floccida*
 (Dough.) Greene. Rocky slope.

No. 19,946. *Linum congestum*
 Gray. Cor. white, aging pink!



Rocky slope. Common.

No. 19,947. ^{= Tritelia} *Brodiaea laxa* (Bth.) Wats.
 Common on the rocky slopes.

Perianth dark purple. Dwarfish
 plants, very different from the
 usual *B. laxa*.

No. 19,948. *Eriogonum caninum*
 (Greene) Munz
 Common. Rocky slopes.

Perianth pink.

No. 19,949. *Calyceodendron multi-*
glandulosum DC. ^{esp. cf. *thalictroides* (DC.) Koch}
 Rocky slopes in small
 colonies; just coming into flower.

Corolla of ray fls. 3-lobed, the mid-
 dle lobe very small as compared
 with the 2 broad lateral lobes.
 Disk corollas white, the anther-columns
 pink or purple. Inner cup-like in-
 volucre with 4 fls. Pappus-paleae
 5 (linear or oblong), tipped with a
 subulate awn $\frac{2}{3}$ as long, and
 with 5 alternating awnless paleae.
 Involucral cup with gland-tipped

hairs.

✓ No. 19,950. *Chlorogalum pomeridianum* (DC.) Kunth. Common on the slopes. $1\frac{1}{2}$ - 2 ft. h. Perianth blueish-purple outside, ^{white inside.} filaments dilated downward. Ovary 3-angled, greenish, the angles whitish with a groove stopping just short of apex. ^{narrow}

✓ No. 19,951. *Hemizonia multicaulis* Nutt. ssp. *vernalis* Keck. Rays yellow.

✓ No. 19,952. *Stachys pycnantha* Bth. 3-4 ft. h. Springs spot on hillslopes.

✓ No. 19,953. *Eschscholzia chrysothoma* F. & M. This tiny annual composite formed a colony $1\frac{1}{2}$ feet square. I did not notice it otherwise.

✓ No. 19,954. *Diplazium aurantiacum* (Curtis) Japson. Everywhere on favored slopes colonies of this shrub add a charm to the country-side.

✓ No. 19,955. *Grindelia* Rays lemon-yellow. Open hillslopes, dry bank. Fine yellow heads!

✓ No. 19,956. *Cirsium occidentale* Heads crimson. Very steep hillslopes. Tiburon.

✓ No. 19,957. *Cirsium* Moist north slope in open ground. Heads white.

✓ No. 19,958. *Lupinus* This white-flowered lupine is common on the hillslopes on the Paradise Cove side of the Tiburon Peninsula - common for

many miles, forming colonies that make prominent marks in the landscape, $\frac{1}{2}$ of an acre to 2 or 3 acres. I do not recall when I have seen so much of it. Sides of banner reflexed, the center spotted. Keel with the lower half of margin ciliate, the upper half and acumen glabrous! Cor. white!

No. 19,959. *Potentilla glandulosa* Lindl.

Colony in a little swale on north (moist) slope. Colony about 10 x 12.

No. 19,960. *Wrightia angustifolia* (DC.) Nutt. Rays, 10, 13. Disk: pop. perianth subulate, 1, on side of fl. opposite subtending bract, about as long as corolla. Proper cor.-tube very short,

about $\frac{1}{4}$ as long as throat.

No. 19,961. *Cotula coronopifolia*

This has all the aspect, habits, appearance of a native - so completely has it made itself at home here in California. Near San Clemente sta., it forms a broad band on the margin of the tidal creek or swale in the salt marsh flat.

- The Paradise Cove shore of the Tiburon peninsula is most attractive - very openly wooded hills of much diversity in swale, hillside and point as to make very lovely scenes - especially in connection with the native flowering. It is a little remote and civilization has not yet spoiled its primitive beauty save in a few spots.

Left Berkeley at 11 o'clock, Friday June 14, drove to Little Oak, Yuba Valley, where I ate a lunch from home, went on via ^{thought} Winters to Madison ^{see p. 285,} to Tamora on the west side highway, thence to Redding. St. Hershey, on Buckeye Creek, there comes down from the Coast Range foothills to the west not only *Quercus wislizenii* but also *Pinus sabiniana*! This station is far out on the plains and the reason for the presence of Digger Pine here is the fact of gravel beds, because it does not spread over the plains. Within about 50 yards of Buckeye Creek Rd north is an old stream bed, also with *Pinus sabiniana*. I stop the night at Redding, (Hotel Loring).

Next morning I go on to Yreka, stop for a few minutes to call on my old-time friend James Davis, Attorney-at-Law, who was camp boy and mule master on my expedition into the Marble Mtn. country in 1907, but he is not at home. I go on over the Siskiyou mts. to Ashland, Medford, Grants Pass and on to Roseburg - an attractive town where I stop the night at the Hotel Rose.

Roseburg is a highly attractive, clean neat town set in the hills with unusually fine city-like business buildings.

Next morning I go on through Eugene to east Portland, across the Columbia River and on to Olympia where I stop the night at the Hotel Governor. Next morning I drive into

Seattle and put up at the Hotel Calhoun.

The next three days I spend at the meetings of the American Association for the Advancement of Science at the University of Washington. I meet Professors Rigg, ^{Tracy}, Hodge and Hitchcock of the University. ^{T.C.E.} Hitchcock invites me to lunch with Gilbert Smith of Stanford and Detling of Oregon University, ^{Lincoln C. Carstensen} and one or two others.

Lincoln Carstensen, who has come from Berkeley, brings J.W. Thompson, the collector, and introduces him.

I meet Owenby of the State College of Washington and many others. Robbins of Davis is here. At the Biologists Dinner I meet Bennett Allen

of the Zoology Dept, Univ. Cal. Los Angeles. Lawrence of Oregon State College and I sit next each other at dinner and I meet again Prof. Owens of Oregon State College. And many others. At one of the botanical sessions I meet Forrest Shreve of the Carnegie Desert Laboratory, whom I had not seen in about twenty years. Incidentally to our conversation Shreve remarked that long ago I had presented him with a copy of my Silva of California; upon this work he passed a high degree of praise which was pleasant to hear. That a copy of the Silva ~~present~~ to him has quite gone from my mind. If he welcomed it and values it, that is sufficient - but, valuing it, it seems ^{that I never thought of it before until} odd, now, that no work of his ever came as a present to me.

I went on Thursday, June 20, to the Taxonomists dinner at the ^{Plant} Hotel Edmund Meany. Not very many present - about 18 - but ^{included} a distinguished guest Louis F. Henderson, University of Oregon, next to whom I sat. He is 83 years old and for most old-time things still has a good memory. He said in reply to my query: "Thomas Howell traveled about Oregon on his collecting expeditions with a spring wagon and a pair of horses. One summer I was out with him in the field. I will remember his father. He was, at the time of one of my visits to the family when I went to see them from Portland at their home place, over 100 years old. He was so old that it was said of him he did not have sense enough

to die. He had entered a second childhood and was a great care to his wife, who was then past 90 years of age. Howell (senior) was still very vigorous physically, had a great shock of hair on his head which had not thinned perceptibly, and a great bushy beard. But he would get up in the night at an unconsciousable hour, go wandering off and Mrs. Howell must needs retrieve him. Mrs. Howell was a most remarkable woman, strong of frame, vigorous, and alert of intellect, she was a wonderful example of the pioneer woman whose mental powers were constantly enlarged and developed in the severe school of the frontier.

One day I was cleaning, polishing and loading my six-shooter. It was my intention to seek out the man who had killed my

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wife by driving an automobile ^{when} drunk. It was truly a criminal act and I proposed to put out of existence such a truly worthless being. At this moment my physician came in. Seeing the six-shooter he asked what I was doing with that. I hesitated for words in making a reply and he repeated his question in an urgent ^{manner}. I told him it was my plan to kill the man who had murdered my wife when he was drunk. When he understood my clear intention, he exclaimed, "Why, you must not do this! You are not yourself. Think of the trouble and disgrace such an act will bring on you daughter and on your grandchildren. Also it will ruin and embitter your own life. Besides you cannot

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cure a wrong of this kind by another act of violence. I beg of you to put all such thoughts aside". I saw the soundness and wisdom of his argument and gave in. Said I, "You take the pistol. Take it away. I do not wish to see it again".

The above story of his deep feeling he told me alone. When a number of the younger botanists were present he told the story of his trip to Mt. Rainier, to collect in the fall. There was promise of beautiful weather. But after a few nights he awoke one morning to find his camp and bedding frozen and topped by two or three feet of snow. He abandoned his camp and botanical collections - everything - and made his way with great uncertainty and danger to lower levels.

J. W. Thompson, the botanical collector is at the Taxonomists dinner (see p. 280). Of Professor M. E. Peck of Willamette University who is writing a Flora of Oregon he said that Peck will not, does not collect a single plant outside the state and that I probably did not collect outside California. Promptly I assured him that I collected in the surrounding states and also in every other continent of the earth so far as I had visited them, that it was absolutely necessary for me to have a word point of view in writing a flora of California.

I drive from Seattle to Kelso on the Columbia River and put up at the Columbia Hotel. Kelso seems a quiet little place but railroad yards right by it kept up a fearful

blast of locomotive shrieks and the freight trucks on the highway, striking uphill grade in front of the hotel, changed gear to low with wonderful results in making the night hideous. Next morning I go on south over the mighty Columbia past Portland to Corvallis, thence to Eugene (June 21, 1940). Near Junction City, near (n.) Eugene I collect *Quercus garryana* on valley floor of Willamette Valley. I go on and stop the night at Grants Pass (Hotel Redwoods). Next morning, June 22, Sat., I go on (p. 286)

No. 19,962. *Phalaris paradoxa* L.

See p. 276. This grass locally abundant in margins of hollows or low places on plain near Madron, just north of Bache Creek.

No. 19,963. *Quercus garryana* Dougl.
Near Junction City, Ore. See above.

to Medford in its beautiful valley, to Ashland, thence climb the Siskiyou mts. on the south slope, in Cal., on the highway, within one mile of Hilt, (at quarantine station) I collect.

"No. 19,964. *Lupinus*

Euphorbia - yellow fls., very abundant on the dry slopes. Hilt.

"No. 19,965. *Elymus caput-medusae* L. ^{near}

This grass is rarely abundant covering the dry hills with a continuous and often ^{near} full cover. Hilt.

"No. 19,966. *Navarretia togetina* Greene
 2600 ft. dry flat. Hutton Creek.

"No. 19,967.

See p. 297 This umbellifer is common and makes white spots, when flowering, on the dry flats. Hutton Creek. Ath-pah = Indian name of plant.

"No. 19,968. *Lagophylla ramosissima* Nutt. Dry flats, Hutton Creek.

"No. 19,969. *Lolium subspicatum* Lag.

Forming small pure colonies on banks. Cottonwood Creek near Hornbrook. 2200 ft.

"No. 19,970. *Plantago lanceolata*
 With preceding. Moist flat.

"No. 19,971. *Asclepias speciosa*
 Dry valleys, Hornbrook.

"No. 19,972. *Pentstemon densus* Dougl.
 Rocky cliffs, Klamath River near Hornbrook. 2200 ft.

"No. 19,973. *Agropyron spicatum* (Pursh.) Scribn. & Smith
 This grass on rocky cliffs, with no. 19,972.

"No. 19,974. *Monardella* ^{reflexa Hornem} ~~villosa~~ A. N. S.
~~var. glabella~~ Gray. With 19,972, on talus.

"No. 19,975. *Eriodictyon californicum* (H. & A.) Greene. Shasta River near Hawkinsville. 2600 ft.

"No. 19,976. *Cirsium*
 Plants conspicuously white-woolly, 2½ to 4 ft. high,

June 22, 1940. 2600 ft.

The main stem rather densely leafy, the ^{terminal} panicle open and usually rather few-headed. Openly bushy hill slopes. Shasta River near Hawkinsville. Heads crimson. Panicle often widely branching.
No. 19,977. *Cirsium*

Heads white. Main stem very stout and fistulose, 4 to 6 ft. high, leafy below, with a terminal panicle above. Notice that the branching is very erect, and that all the branches are slender, in marked contrast to the main axis. Openly bushy slopes. With 19,976.
No. 19,978. *Eriogonum nudum* var. *pubiflorum* Stems 4 to 7 from the root-crown, erect. Flowers yellowish. Very abundant on the open hills. Leaves, all ^{basal}, all gone, and functioning of photosynthesis is by means of the

green stems. With 19,976.

- Hornbrook: *Anthemis cotula*
Verbascum thapsus. Along the Klamath River just below Hornbrook: *Rhamnus crocea* var. *ilicifolia*, 8 ft. high; *Vitis californica*; *Mentzelia laevicaulis*; *Eremocarpus setigerus* (only a few individuals noticed along roadway).

- I run on from the Quarantine Sta. near Hilt (see p. 286) down grade to Hornbrook, thence to the Klamath River Cañon, ^{and down it} to the bridge, thence across ^{bridge} and southerly along Scott River to Hawkinsville (see pp. 287-288).

"No. 19,979. *Eriogonum vimineum*
Rocky hillslope.

"No. 19,980. *Eriogonum strictum* ssp.
proliferum var. *proliferum*
Roots run widely branch-

ed, densely leafy, forming a
rough cushion from which arise
the naked flowering stems,
the heads in a trichotomous
cymes, one head sessile in the
fork. Fls. white. Rocky hillslope.
T initial

"No. 19,980a. *Cichorium Intybus* L.

This *Scabiosa* used form
colonies on the sides of streets in
Yreka.*

"No. 19,981. *Crepis*

Rocky hillslope east
of Montague. June 23, 1940.

* It is abundant along roadways
all through Scott Valley and as far
nearly as Weed - its large blue heads
open in the morning.

"No. 19,982. *Lupinus*

Cor. dull crimson; keel, wings
and banner subequal, or the banner
a little shorter than keel and wings.
Sides of banner reflexed. Keel glab-
rous! Lower calyx lip narrow,
keeled, distinctly notched at apex.
Upper calyx-lip very short ($\frac{1}{6}$ the
length of upper). Lower calyx-lip
villous with spreading hairs.

"No. 19,983. *Phacelia virgata* Greene.*

Dry rocky hillslope; not
rare but the individuals widely
scattered in the dry grass.

"No. 19,984. *Camelina microcarpa* Andr.

This creifer on dry flats.

- *Lomatium*

dry rocky hillslope 2 mi. E. of
Montague. No. 21,108.

* = *P. magellanica* Cov. var. *heterophylla* (Benth.).

No. 19,985. *Lepidium perfoliatum* L.

This crucifer by roadside in
lava rocks.

No. 19,986. *Ribes velutinum* Greene

Rounded bush 5 ft. h. The
yellowish spines on the season's
shoots are extremely conspicuous
and give a decided character
to the shrub.

No. 19,987. *Eriogonum vimineum*

Fls. pinkish-white.

No. 19,988. *Calochortus macrocarpus* Dougl.

Petals short, abruptly
slender-acuminate at apex, lavender,
base of petal with a whitish
spot or base, the upper half
sprinkled with long hairs, in
the center a lunate gland.
Sepals lanceolate-acuminate, bor-
dered below ($\frac{3}{5}$) by a lavender
membranous border. In dry grass
on flat.

No. 19,989. *Nicotiana attenuata* Torr.

Sandy flats. See p. 298. 1 to 2 1/2
ft. h. main stem at base very stout in
thifty plants.

No. 19,990. *Solanum triflorum* Nutt.

Fruits on deflexed pedicels.

Sandy flat.

No. 19,991. *Nama densum* Lemmon.

Sandy flats. Markedly depressed,
as if prostrate. See p. 315.

No. 19,992. *Cryptantha ambigua*

Greens. Sandy flats.

No. 19,993. *Erigeron filifolius*

(Hook.) Nutt. Rays purplish-blue.

Rocky flat. *Leptodactylon*

No. 19,994. *Juniperus* (Torr.) var. *shastae* Gibson.

Rocky flat. Rounded bush, 10-15 in. h.

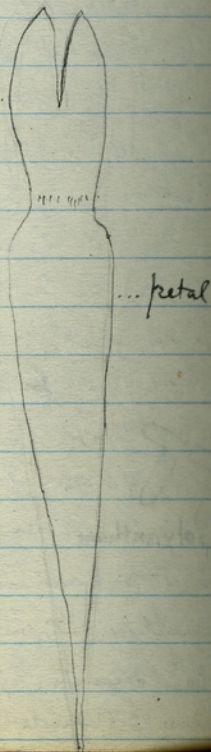
No. 19,995. *Eriogonum umbellatum*

var. *polyanthum* Plants with a woody base,
the top portion (taken as sprigs) about
equaling the woody lower portion.
These plants of rocky flats are
small undershrubs, 2-2 1/2 ft. h.

(little) e. side, e. of Mayten. and
 no. 19,996. *Juniperus occidentalis* Hook.
 det. J. C. Vasey 2/12/26
 Trees small, 6 to 15 ft. h., often
 shrub-like.

No. 19,997. *Agropyron spicatum* (Pursh.) Scribn. & Smith
 This grass on the sandy
 flats. Very heavy stools - the stools
 scattered - not forming continuous mat.

- *Silene*, cont. from
 p. 301, no. 20,027.
 Corolla white.
 Bushy plant
 with erect
 intertangled
 branching.



no. 19,998. *Gnaphalium*

Sandy flats.

no. 19,999. *Mentzelia*

Sandy flats. See note below.

no. 20,000. *Pentstemon laetus* Gray.

Cor. blue. Sandy flats

no. 20,001. *Phacelia iowiana* Torr.

Sandy flats.

- *Mentzelia*, no. 19,999.

Petals light-golden

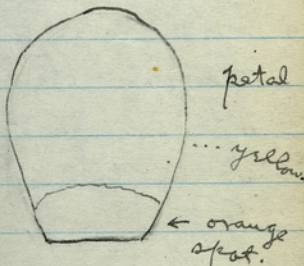
yellow with a
 reddish or bet-

ter orange spot
 at base. Petals

1 line long and
 the flowers very
 small therefore.

Petals with very broad base -
 not clawed, unless claw be
 interpreted as very broad.

Stamens 13. Calyx so deeply cleft
 that segments are nearly distinct.



No. 20,002. *Eriophyllum*

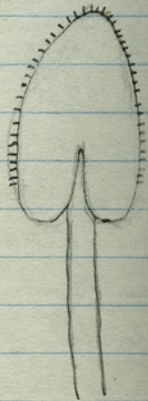
Low brushy hills

No. 20,003. *Lupinus*

Stems procumbently radiating from the root-crown and ascending in the center, forming a low circular plant 16 in. broad; this spm. $\frac{1}{2}$ of entire plant. Low brushy hills.

— *Penstemon*, see p. 301, No. 20,026.

Filaments and style glabrous. Upper pair of stamens the shorter. Corolla blue, the tube purplish, shorter than the throat, the lobes subequal; upper lip with its lobes spreading or a little recurving; lobes of lower lip spreading, suborbicular, the middle one erect with recurved sides!



— Cont. p. 297

No. 20,004. *Eriophyllum*

Low brushy hills.

No. 20,005. *Chaenactis*

See p. 298. Low brushy hills.

No. 20,006. *Gymnophytum*

Many inch clusters from the root-crown, forming an erect very handsome plant. Open brushy hills.

— Cont. from bottom p. 296. Throat a little ventricose on lower side, the whole throat much distended above the tube. Stamens not exerted from mouth of throat, the filaments declined or curved in mouth of throat.

— Cont. from p. 293, no. 19,991. Name *densum* Lem. Corolla $\frac{1}{4}$ to $\frac{1}{2}$ line broad, blue. Stamens unequal and unequally inserted in lower half of tube.

— Cont. from p. 286 (no. 19,967). The cluster of tubers used for food by the Indians of this region, etc. James Davis.

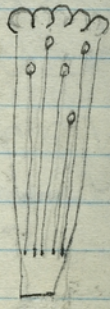
298

Andesite sta., Siskiyou Co.
n. of Mt. Shasta. Open brushy hills."No. 20,007. *Senecio canus* Hook.
Sandy hills."No. 20,008. *Erigeron filifolius* (Hook.)
Nutt. Rays purple. Sandy hills."No. 20,009. *Sitanion hystrix* (Nutt.) J.G. Smith
This grass on sandy flats"No. 20,010. *Suaeda fraseri*
Open brushy hills.— Chaenactis, cont. from p. 297, no. 20,005.
Pappus-scales broadly linear, very
obtus or truncatish —, 10, 10, sub-
equal. Notice one main stem fasciated!!

— Nicotiana, cont.

From p. 293, no. 19,989.

Stamens 2 long, their
anthers ^{mouth of}
A nearly in throat,
2 shorter,
1 shorter still;
all inserted at
summit of (proper)
tube which is about
1/4 as long as throat.



3200 ft. June 23, 1940.

299

"No. 20,011. *Sitanion hystrix* (Nutt.) J.G. Smith
This grass on open brushy hills."No. 20,012. *Phacelia virgata* Greene.
Open brushy hills."No. 20,013. *Pursinia tridentata* DC.
Open brushy hills."No. 20,014. *Penstemon gracilentus*
Gray. Yellow Pine belt, 2 mi. SE.
of Andesite"No. 20,015. *Ceanothus prostratus*
Benth. With 20,014."No. 20,016. *Eriophyllum*
Open brushy hills."No. 20,017. *Bromus carinatus* H. & A.This grass in open brushy
sandy hills, 1 mi. S. of Andesite"No. 20,018. *Ceanothus*.
1 mi. S. of Andesite."No. 20,019. *Ribes cereum* Dougl.
Shrub 3 1/2 ft. h. Berries
pink. Open brushy hills.

On the ^{flow} brushy hills along Weed-Plam-
ath Falls highway near Audesite sta. are
the shrubs (and other plants) re-
corded on pages 296-299 ante. In
addition there are two Composite
bushes, very common, not in flower,
as follows:

- "No. 20,020. *Chrysothamnus aff.*
(*sterile!*) *nauseosus* ^{(Pall.) Britt.} bush 1 to 3 1/2 ft.
gray rounded
high. This and next extensive over region.
- "No. 20,021. *Chrysothamnus viscidiflorus* (Hook. & Wilt.) ^{var.}
viscidiflorus ^{green} bush 1 to 2 1/2 ft. h.
rounded

And also:

- "No. 20,022. *Artemisia tridentata* ^{Nutt. ~~Pursh~~}
Not abundant or forming
any considerable colonies.
- "No. 20,023. *Cercocarpus ledifolius*
Shrubs 4 to 12 ft. h.
- "No. 20,024. *Achillea lanulosa*
Opens on brushy hills.

- "No. 20,025. *Collomia grandiflora*
^{rough.} Cor. light salmon-color,
"opens" on brushy hills.

- "No. 20,026. *Pentstemon*
Cor. blue. See p. 296.

Opens on brushy hills.

- "No. 20,027. *Pidene*

Open brushy hills. See p. 294.

- "No. 20,028. *Cryptantha ambigua*
Greene. Sandy hills.

- "No. 20,029. *Cryptantha Hendersonii*
Piper. Sandy hills.
Det. R. F. Hoover.

Shasta Valley, e. of Grenada

June 23, 1940

- "No. 20,030. *Scirpus robustus*
Swamp in valley flat.
- "No. 20,031. *Puccinellia distans* (L.) Parl.
This grass with 20,030.

Drove from Yreka to McCloud on a trip to east side Mt. Shasta, with Supervisor William Jones of the Klamath Forest. From McCloud to Pilgrim Creek nursery and met

Fors of U. S. Forest Service who is experimenting with fire-spread in relation to wind velocity. From Fors we got detailed directions regarding the old emigrant road from Oregon to California which passes over the east side of Mt. Shasta, between Mt. Shasta and Ash Creek Butte. The divide where the road goes over is now known as Military Pass. Passing by heavily traveled forks, we kept to the old road and after a time there was nothing but the old emigrant ^{trail}, mostly a smooth dirt road through a fine open stand of large-sized *Abies magnifica*.

June 27, 1940.

over this route came the Hudson Bay Company trappers that were in the lower San Joaquin Valley in 1824; and over it came J.C. Fremont on the way from Oregon; and many another. Then we tried to pick up the wagon trail branching off it towards Brewer Creek. Twice we found branches upward but they seemed uncertain and we went on a long way, and finally got the right branch upward, a clear fair, free road through great open timber — and soon it began to double back a long distance. We came to a great "open" in the forest ($\frac{1}{6}$ mile wide) covered with *Chrysothamnus* (no. 20,048) in a uniform stand 12 to 15 in. high bushes, bright green, and no sign yet of flowering. Here, too, are various herbaceous plants as collected and numbered:

- "No. 20,032. *Calyptridium*
Sandy flat or open slope.
- "No. 20,033. *Eriogonum marifolium*
Fls. greenish-yellow.
Sandy flat or open slope.

"No. 20,034. *Castilleja*
Sandy open slope. Cont. p. 308.

"No. 20,035. *Pentstemon gracilentus*
Gray. Cont. p. 310. Sandy slopes, open forest.

"No. 20,036. *Ribes cereum* Dougl.
Fls. white.

- To the "open" (cf. p. 303) add nos. 20,038-20,049.

- The "road" is continually blocked by fallen logs and we are continually chopping our way through. One log has fallen across another log in such a way as to balance it and we go out to the far end and use it as a long lever by pushing to swing the big end off the rail. And so on.

June 27, 1940

indefinitely, clearing and chopping.
"No. 20,037. *Stipa californica* Merr. & Davy
This grass in rich loam

in open forest

"No. 20,038. *Pyrola picta* Sm.
In rich deep loam in forest.

"No. 20,039. *Corallorhiza maculata* Raf.
Cont. p. 310. Deep loam in forest.

"No. 20,040. *Arctostaphylos nevadensis*
opens in forest.

"No. 20,041. *Lupinus*
Rich loam in forest (open).

Cont. p. 314.

"No. 20,042. *Phlox Douglasii* Hook. ^{*diffusa* Benth.}
Forming flattish mats in open forest.

- At last we reach Brewer Creek. Here we leave the car and strike upward towards timber line.

"No. 20,043. *Carex*Scattered plants on the
sloping ridges"No. 20,044. *Oicentra uniflora* Kell.Openly forested rid-
ges."No. 20,045. *Viola purpurea* Kell. sp.*integrifolia* B. & C. Petals yellow. Rare
at this time. Openly forested
ridges. Near timber line"No. 20,046. *Phlox* ^{*diffusa* Benth.}
~~*douglasii* Hook.~~

Cor. white. Timber line.

Corolla drying lavender.

"No. 20,047. *Pinus albicanlis* Engelm.

Timber line.

- At timber line a magnificent view
unfolds: southeasterly to Lassen Peak,
easterly to the Warner Mts. faint on
the most distant sky-line. Northward
to Goosewast and Whaleback. We
retroce our steps to the camp

at Brewer Creek.

On the way back to the emigrant
road I collect: (C. 5500 ft.)"No. 20,048. (*Chrysanthemum*) ^{*Ho*}
~~*sterile* spms.~~ ^{*Bl.*} ~~*all discarded!*~~ ^{*pp. 303-4.*}
Cont. pp. 309, 303. Corolla the "open" sea,
no flowers or fruits."No. 20,049. *Monardella odoratissima*

Benth.

In the "open" described

on p. 303. Fls. whitish.

"No. 20,050. *Gilia aggregata* Spr. Cont.

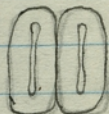
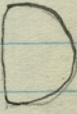
p. 309.

"No. 20,051. *Arctostaphylos patula* Greene
Near emigrant road.- *Patentilla*, cont. from p. 308, no. 20,053.

The anthers opposite petals
are on very short fila-
ments; the alternate
ones are on deltoid
filaments which

are the longer.

Ptals. white deltoid-obovate,
truncate at apex, very
shortly clawed. The anthers seem
peculiar and should be compared
with allied species.

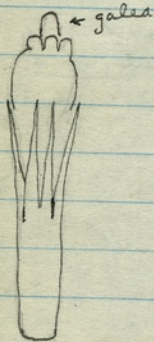
Anthers-
top view.Side view.
of anthers.

- no. 20,052. *Agoseris grandiflora* ^{3200 ft}
Open in chaparral.
no. 20,053. *Potentilla Hookeria*
Open flat in chaparral

Cont. p. 307.

- no. 20,054. *Elymus glaucus* var. *jepsonii*
This grass with 20,053. ^{Dry}
no. 20,054A. *Stipa californica* Merr. & Davy ^{Mixed with above}

- *Castilleja*, cont. from p. 304, no. 20,034.



The ⁴ calyx lobes are equal,
the 2 lower lobe is less
sinus between the
deep than the sinus on
the sides, while the
sinus on upper side
is deepest of any.
The galea is very
short exceeding the lower

or lip only a little.

Lip brownish with burnt-^{or scarlet} ~~mark~~ teeth.

Calyx greenish, its lobes brownish.

June 28, 1940

no. 20,055. *Kelloggia galioides*
with 20,053. Common.

no. 20,056. *Euphorbia*
With 20,053.

no. 20,057. *Purshia tridentata* (Pursh.) Wt.
Common component of chaparral.

no. 20,058. *Prunus emarginata* Hook.
Common component of chaparral.

- *Gilia aggregata* Spr. cont. from
p. 307, no. 20,050. Stamens slightly
unequal and a little unequally inserted
in throat. Anthers just ex-
posed from throat. Corolla lobes lan-
ceolate, rotate, dull white-splotched.
Calyx internodes white-membranous,
turning pink. Style $\frac{2}{3}$ as long as
corolla-tube and throat.

- *Graysothamnus*, cont. from p. 307, no.
20,048.

This is common throughout the forest
on the east slope from about 7000
feet to 5000 feet. Thence it continues
to Pelgrim Creek, McClound town, and
east to Forest Service camp on McClound
River.

No. 20,059. *Festuca idahoensis* Elmer
This grass on flat, borders
of chaparral.

No. 20,060. *Lupinus*

Sandy flat. Cont. p. 314.

No. 20,061. *Sidalcea*

Sandy flat. ♀. Cor. crimson

No. 20,062. *Sidalcea*

Sandy flat. ♂. Stems several

— *Boralechthys*, cont. from p. 305, no. 20,035

Middle lobe lower lip white, purple spotted, its margin a little denticulate and undulate — obscurely as to both.

— *Pentstemon*, cont. from p. 304, no. 20,035

Cor. lobes blue, throat and tube red-purple; upper lip lobes recurved; lower lip larger than the upper, shallowly lobed, each lobe with a deep hollow at base, the hollow produced downward into throat as a groove or trough. Sterile stamens with a zone of short yellow hairs on upper side near apex. (Cont. p. 311)

from the base, $3\frac{1}{2}$ to 4 feet high.
Sandy flats.

No. 20,063. *Eriogonum marifolium*

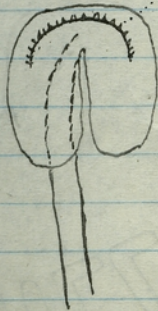
Sandy flat. Stems from a much-branched ^{but low} woody base.

No. 20,064. *Eriogonum marifolium*

With 20,063; but notice proliferation of umbel.

Cont. from bottom p. 310, no. 20,035.

anthers slightly exerted from throat. Style as long as stamens or nearly.



left of anthers.
anthers, showing attachment of filament.

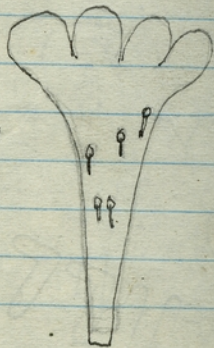
Upper (shorter) pair of stamens attached at very base cor-tube; lower (longer) pair of stamens adnate a short distance ($\frac{1}{2}$ line) above base of tube.

no. 20,065. *Lappula californica* Piper.

Crests of corolla throat = sacs
as seen from under side at top of
cor.-tube. Cor.-tube short, scarcely
exceeding calyx-lobes. Cor. white.

Nutlets with scattered prickles all
over back, those on margin distinct.

- *Gilia pungens*, cont. from p. 305, no. 20,042.



Corolla, showing
insertion of
stamens.

Cor. white. Stems prostrate, the
brachylets many, forming a low
mat; going past blooming.

June 30, 1940

or with 3 or 4 on each side slightly
joined at base

no. 20,066. *Pentstemon laetus* Gray.

Cor. blue, tube purple. Lower lip
longer than the upper; lobes upper lip
rearing; lower lip spreading, its palate
with two small ridges starting at rim and

- *Lupinus*, cont. from p. 305, no. 20,041.

Corolla: keel the longest and most
prominent part of corolla, strongly
curved, so that the long almost
subulate acumen stands horizontally, its
tip infolded by the involute tip of the
banner. Banner ovate-lanceolate, with
a prominent involute tip. Wings
white, ^{soon sordid,} their tips curving over middle
of acumen. Keel white. Banner
white at an early stage, quickly
sordid. Keel glabrous!! Mt. Shasta.

running down into throat; no folds or
troughs or shallows between, at least at
all marked. Tube very short. Lower
pair stamens the longer, all stamens and
style glabrous. Cor. externally with short
gland-tipped hairs. Anthers denticulate-
marginated, the basal tips indehiscent.

- *Lupinus*, cont. from p. 310, no. 20,060.
Corolla blue, its wings, keel, banner,
subequal or equal. Banner with a
white center and a few purple
dots. Acuminate purple, its margin
densely villous. Upper calyx
lobes cleft $\frac{1}{3}$. Lower lip ob-
scurely 3-toothed at apex.
McCloud, forming colonies on the
sandy flats. Banner and keel
turning sordid, the keel persistently
whitish.

No. 20,067. *Erigeron inornatus* Gray var. *inornatus*
Involucres glab., imbricated. Stems
decumbent from a thick or heavy root-
crown, spreading circularly. This would
be *E. miser* save the herbage is ^{thinly} hispid-
ulose and not "conescently hispid," and
leaves not "linear-oblong." The plants, on
sandy flats are almost prostrate, the
stems ascending at end; the leaves unilateral.

- Cont. from p. 293. Shasta Valley. most of the
numbers (19,997-19,999) were collected well over on
east side of valley in the Juniper colony. Also
noted at this station: *Artemisia tri-*
dentata; *Chrysothamnus*, same as no. 20,020;
Purshia tridentata; *Pinus ponderosa*;
Gnaphalium ^(no. 20,087) —; *Nanus* (no. 19,991), stamens
and style short, low in tube; cor. pale
lavender; *Arctostaphylos patula*; *Monticola*;
— *Leucophaea* *sp.*

- Along the pavement margin betw.
McCloud and Fowler's Camp, in broken
ground, there is a young and often
dense stand of *Pinus ponderosa* seed-
lings. Very marked, because not in
ground further back.

No. 20,068. *Navarretia divaricata* (Torr.)
Greene. Cor. white, $1\frac{1}{2}$ lines.

long, minute rather, but with a
distinct tube and throat. Stam-
ens slightly unequal, unequally
inserted about middle of throat.
Anthers, in part, exserted from throat.
Sandy depressions.

No. 20,067. *Potentilla*

Stamens 10, equal, filaments
slightly dilated downward, those opp. calyx-
lobes a shade broader. Calyx-lobes
triangular-acute, exactly rotate. Petals
oblong-ovate, acute, white, about
as long as calyx-lobes, spreading.
 $\frac{3}{4}$ to 1 line long. Stamens erect.
Sandy flats.

June 30, 1940

Piskiyon Co.

No. 20,070. *Mimulus layneae* Jepson.

Corolla light crimson,
sometimes fading whitish, its lobes
equal and same shape; and the
corolla is regular save that the
lobes of upper lip are slightly
turned backwards while those of the
lower lip are spreading, the lateral
ones spreading laterally. Throat on
lower side with small lanceolate
purple marks opp. each lobe of
lower lip, 2 folds opposite sinuses
of lower lip running down into
throat. Throat on lower side externally
sprinkled with purple dots. Some
purple markings and dots inside
on lower side throat but weak
and indefinite. Calyx as long as
tube. Sandy spots on rocky flats.

"No. 20,071. *Nana lobbia* Gray.

Cor. purple inside, its lobes ascending. Stamens 3 long and 2 shorter, the anthers of the longer standing in upper part of throat. Styles distinct to base, the lower half hairy. Filaments adnate at base of tube for one line, the adnation structure in relief and very narrowly winged on each side. Running rootstocks give rise to colonies, the rootstocks 1 or several feet long. Sandy flat.

"No. 20,072. *Stipa californica* Merr. & Davy

This grass has tall widely spreading culms with very long slender spike-like panicles, — wand-like, strict. Spreading culms in the sense of leaning away from the perpendicular.

"No. 20,073. *Chaenactis*

Pappus-scales linear-oblong, serrulate or dentate at apex or rather denticulate, often obscurely. Sandy spots on rocky flats, or growing in rocks.

"No. 20,074. *Beaumontia prostrata*

Hugs ground very closely; opens in chaparral. Bracts very thick, rounded and fleshy, much larger (thicker and taller) than the cells or lobes of the ovary proper.

"No. 20,075. *Asclepias cordifolia*

Rocky outcrop in chaparral.

— This camp is a pleasant place. There are a few campers here but not enough to make a noisy crowd. At this altitude, 3100 feet, the day temperatures are agreeably cool for the most part. Here in short are the delights of the Sierra Nevada in summer.

The McCloud River is a splendid stream brawling over a rocky bed. The stream bed ^{here} is filled from side to side with a tropically luxuriant growth of *Saxifraga petata*, the *Peltiphyllum* of Engelm. — its tall petioles and large leaves being the finest I ever saw.

At my camp, agreeably framed between the fir trunks Mt. Shasta rises grandly and dominates everything.

no. 20,076. *Eriogonum inornatum* Gray var. *inornatum*. Involucres glabrous. Stems glabrous. Leaves glabrous save scattered hispulous hairs on margin. In all respects like no. 20,067 but the stems erect (several from the base). Root crown buried several inches.

(var. *shastensis* (Hook.)

no. 20,077. *Pentstemon procerus* Dougl.

Cor. blue; upper lip cleft half way, its lobes parallel-ascending; lower lip rather deeply cleft, its lobes spreading, its palate with 2 marked ridges, the ridges markedly hairy. Lower pair of stamens slightly longer than the upper pair, all glab. Style glab. Lower pair of stamens adnate to cor. tube at base for about 1 line's length, the filaments strongly in relief on adnate portion; upper pair of stamens inserted at very

base of tube, not adnate to tube.
Fifth stamen with a distinct
but small tuft of hairs on one
side at apex, the tuft down-
wardly pointing. Cor. tube and
throat purple.

No. 20,078. *Minimus*

Same as 20,070, with
same corolla color pattern.

- *Sidalcea*, cont. from p. 310, no. 20,062.
Circle of carpels flat on top, no
beak to inner angle or merely
an obsolete one. Calyx-lobes in
anthesis lanceolate-acute, in
fruit ovate-acute, erect! comple-
tely concealing the carpels save
from the top. Petals quad-
ratic, crimson, notched;
anther-clusters ovoid, ^{truncatis at apex} anthers biun-
nerved.

No. 20,079. *Arabis glabra* Bernh.

This crucifer stands 4 1/2
ft. h. on a little open sandy flat
in midst of chaparral. Petals broadly
ligulate, the blade purplish, the claw
slightly broader than the blade. Fla.
1 3/4 lines long.

No. 20,080. *Lotus crassifolius* (Benth.)
stems several from the base, dif-
fusely spreading.

- *Sidalcea*, cont. from p. 325, no. 20,088.

Calyx-lobes in anthesis broadly
lanceolate, short-acuminate, in
fruit involute so as to be tubular
with the upper half open or plane
(that is narrowly nule-eared),
widely spreading from middle of
fruit! the carpels with a circle of
beaks so as to form a sort of
crown in center! Petals pale *Sidal-*
cea color, cuneate-obovate, truncatis,
notched, 1 1/4 times as long as in no. 20,062.
Further-cluster smaller than (cont. p. 324)

No. 20,081.

This chenopod on a little sandy flat, an open in the chaparral.

No. 20,082. ^{*machroanthema*} ~~*Aster*~~ *Shastensis* Gray var. *shastensis* Rays lavender-purple. Sandy flat.

- cont. from bottom p. 323. in no. 20,062, the anthers white. In this there are fascicles of anthers, no splitting of the stamen column.

In no. 20,062, the stamen-column is split into short ribbons bearing a number of anthers.

Some on split segments of the stamen-column.

No. 20,083. *Phacelia griseophylla* (Brand) Jepson. Sandy flats.

No. 20,084. *Elymus glaucus* var. *jepsonii* Davy. This grass with few stems from base, erect but widely spreading.

No. 20,085.

This grapholoid low diffuse, sandy flat.

No. 20,086. *Astragalus scopulorum* var.

^{podiculate} This cichorioid has rather showy yellow flowers. Loamy flat.

No. 20,087. *Chamaesaracha nana* Gray. In loamy soil, thin chaparral.

No. 20,088. *Sidalcea*. Loamy flats in thin chaparral. Cont. p. 323.

This plateau country between here and McCloud town has been cut over long ago or burnt over on both, and the forest stand replaced, save for occasional grove or scattered second growth, by a medium growth of chaparral consisting of the following:

Arctostaphylos patula. Abundant.

Purshia tridentata. Common and often abundant.

Prunus emarginata (Hook.). Abundant.

Prunus demissa Walp. Common in spots, colonizing freely by rootstocks.

Ceanothus cordulatus Kell. Abundant

Cercocarpus parvifolius

Amelanchier alnifolia Nutt. Common.

Ceanothus velutinus. Abundant

Quercus Kelloggii

The trees on the plateau referred to on p. 326 are:

Abies concolor

Pinus ponderosa

Libocedrus decurrens.

Along the McCloud River is Douglas fir (*Pseudotsuga taxifolia*).

No. 20,089. *Gayophytum*

Cor. white, open in the morning until 10.00 o'clock, then closing and promptly fading pinkish. Loamy flats.

No. 20,090. *Rhamnus rubra* Greene

Half-way to McCloud.

No. 20,091. *Hypericum*

Half-way to McCloud

By roadside.

No. 20,092. *Prunus virginiana* L. var.

demissa (Nutt.) Sarg. Vigorous type, frequent in the plateau chaparral. Vigorous terminal ^{erect} vegetative shoots with large leaves.

No. 20,093. *Prunus virginiana* L. var.

demissa (Nutt.) Sarg. Seems more slender than 20,092 and no pronounced terminal densely leafy erect shoots.

July 3, 1940.

Barter, e. Siskiyou Co.

c. 3900 ft.

No. 20,094. *Iris*

Forming little colonies on loamy flats.

No. 20,095. *Achillea borealis californica*

No. 20,096. *Navarretia divaricata* (Torr.) Greene.

No. 20,097. *Cryptantha affinis* (Gray) Greene.

No. 20,098. *Haplopappus Bloomeri* var. *anous-tatus* Gray This composite is the

prevailing low bush almost everywhere from McCloud to Barter. Not yet in flower; one exceptional plant found in fl., rays 2 or 3 yellow.

Large mdw. c. 5 mi. S. of Bartle.
Siskiyou Co., July 3, 1940.
= Big Bear Flat, 4000 ft.

No. 20,099. *Downingia*

Cor. pale blue; lower
lip with white quadrate center field,
the lateral lobes spreading. Two
ridges in throat on lower side, the
ridges purple capped by 2 yellow
spots at the angle of lip plat-
form. Cor.-tube on upper side
distended or ventricose or "lumped",
the sinus between the lobes of upper
lip cut down into this lump, the
lobes recurving. ^{↑ or slit} Stamen column tipped
by 2 minute cusps, microscopic
rather. Low spot.

No. 20,100. *Orthocarpus hispidus* Benth.
det R.E.B.
Abundant. Cor. yellow. Mdw.
10/53

No. 20,101. *Gnaphalium*
Low fields.

Large mdw. c. 5 mi. S. of Bartle,
Siskiyou Co., July 3, 1940.
= Big Bear Flat, 4000 ft.

No. 20,102. *Navarretia intertexta* Hook.

Dry mdw. Cor. pale lavender.
Stamens exserted from throat.

No. 20,103.

This composite has thick
fleshy taproot. The young heads are
pendulous recurved on their peduncles.
Fls. yellow. Abundant in mdw.

No. 20,104. *Poa compressa* L.

This grass in mdw.

No. 20,105. *Brodiaea Jitteleia*

The smaller plants in
mdw. look like the *B. hyacinthina*
plants of the Sacramento Valley or
Coast Ranges, but the large spms.
taken seem different.

No. 20,106. *Pentstemon*

No. 20,107. *Spiraea douglasii*

Big Bear Flat

"No. 20,108. *Allocarya hispidula*
Greene. Dry spots in mdw.

"No. 20,109. *Galium*

"No. 20,110. *Sidalcea*

"No. 20,111. *Cirsium*

Fls. white. Abundant
in mdw. and giving the scene a
more distinctive character than
any other plant. Stems 1 to 3 ft
high, mostly 1 to 1½ ft. The
one or few terminal heads are
surrounded by an involucre of
upper leaves, which much surpass
the heads; these leaves give the
heads or the infl. a look
different from that of any other
Cirsium.

July 3, 1940.

Hood Pt.

"No. 20,112. *Agrostis scabra* Willd.

This grass in a thick
stool.

"No. 20,113. *Phleum pratense* L.

This grass with solitary
or few culms.

"No. 20,114. *Juncus*

"No. 20,115. *Linanthus harknessii*
Greene.

"No. 20,116. *Heterocodon*

"No. 20,117. *Potentilla*
Pets. white.

"No. 20,118. *Polygonum*

"No. 20,119. *Orthocarpus hispidus*
Bth. ^{racemes black} ^{Feb 10/24/53}
Cor. ^{sepals} yellow.

"No. 20,120. *Julia gracilis* Hook.
^{= *Microsteris*}

"No. 20,121. *Danthonia californica* var. *americana*
(Scribn.) Hitchc.
This grass rare.

"No. 20, 122. *Gilia leptalea* (Gray) Armer
^{ssp. leptalea}
Cor. pink. Dry
rocky slopes.

"No. 20, 123. *Polygonum*

Bayton Valley,
There is here a large some-
what narrow valley. On its ^{foothills} edge
I observe: *Ceanothus cuneatus*, (cont. p. 335)

Burney Falls (3 mi. S.)

Shasta Co., July 3, 1940.

"No. 20, 124. *Eriogonum vimineum*
dry open pine flat.

No. Stems diffuse.

"No. 20, 125. *Wyethia mollis* Gray
Abundant on the
pine flats.

— Burney Falls are very picturesque and well worth seeing.

from Burney Falls

— I drive southerly until striking the Acton-Redding Highway and go west on it to Burney where I stop for dinner. A logging and mill town, raw and crude. Nearly every eating place is really a saloon or drinking place with little or ^{lots to drink but} nothing to eat. I go on

westerly over Hatchet Mt. summit and down to ^{Little} Hatchet Creek where I camp in the woods for the night. At this spot: *Abies concolor*, *Pseudotsuga taxifolia*, *Thrinacospora latifolia*, *Pteridium aquilinum*, *Cornus nuttallii*, *Taxus brevifolia*, *Acer circinatum*, *Pinus ponderosa*, *Verbascum thapsus*, *Lilium californicum*.

— Cont. from p. 334. *Aquilegia Kelloggii*, *Eremocarpus setigerus*, *Aquilegia garyana*, *Verbascum thapsus* and nos. 20, 122-20, 123.

- ✓ No. 20, 126. *Taxus brevifolia* Nutt.
16 ft. h.
- ✓ No. 20, 127. *Acer circinatum* Pursh.
- ✓ No. 20, 128. *Osmorhiza*

- ✓ No. 20, 129. *Arabis glabra* Bernh.
This crucifer very tall
and very strict, its branches from
the base and not all spreading
but very closely erect. I have
divided the single plant for
two folders by cutting through
the root.

- ✓ No. 20, 130. *Mimulus torreyi* Gray
Sandy flat. Same as no. 1
20,070.

- ✓ No. 20, 131. *Bromus orcuttianus* Vasey
The culms of this grass
are solitary or perhaps 2 from
the root.

- I drive westerly from Little Hatchet
Creek over a mountain to Montgomery
Creek, a small village. Below it
about 2 mi. I collect in a tiny
swamp and on its borders nos.
20,132-20,138. I drive on
westerly. This highway has been
"improved" and straightened and
everywhere along it offers oppor-
tunity to get off the narrow
pavement and park on seg-
ments of the old road in
order to botanize, or ^{park} in the
forest. The foothills below
bordering
Ingot are especially attractive
though dead and dry now. [Cont.
p. 342]

- ✓ No. 20,132. *Minulus guttatus* DC.
Springy spot, shallow
standing water.
- ✓ No. 20,133. *Cyperus*
Springy spot.
- ✓ No. 20,134. *Juncus ensifolius* Wikstr.
Springy spot.
- ✓ No. 20,135. *Agrostis alba* L.
This grass is a
moist spot but not wet.
- ✓ No. 20,136. *Spiranthes porrifolia*
Lindl. with 20,135.
- ✓ No. 20,137. *Juncus*
Dry ground.
- ✓ No. 20,138. *Juncus dubius* Engelm.
(det. P. Rubtsov, Jan. 1972)
Standing in
shallow water.

— *Cercis occidentalis*

Near Jugot, Shasta
County.

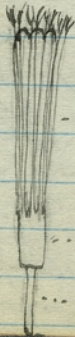
- ✓ No. 20,139. *Eryngium*
at *.
Cont. p. 341. Low ground, valley flat.
gray-green colony; diffusely branched.*
- ✓ No. 20,140. *Eryngium*
Heads blue. Forming
an extensive colony in the
swale of a valley. Stems
single (usually) from the
root crown, very erect and
erectly branched. Bracts with
a pair of somewhat spreading lobes
near the middle, the lobes spine-
like, the body of the bract below
the spines membranous-margined,
keeled. Stamens conspicuously ex-
serted, equaling or nearly equal-
ing the spiny-tipped bracts.
- * Sepals oblong, membranous-margined, tipped with one spine or with 3, when 3 the central one longest. Of the 5 sepals in a calyx 1, 2, or 3 are tri-spiny at tip, the others with 1 spine.

- No. 20, 141. *Eriogonum nudum*
var. *nudum*
Plants very erect, sparsely fur-
branched above (infl.), 2 1/2 to
3 ft. high, forming a continuous
and pure cover - probably 1000
acres or more - 300 acres in im-
mediate view at this point (see p.
344) on the first broad bench
say about 40 feet above valley
floor (that is west of valley floor).

- No. 20, 142. *Hemizonia fitchii* Gray.
Centromadia

Rays 13, 12, 13; short,
rather narrow.

Borders of a an
dry pond without
outlet.



corolla →

..... slender pappus
filaments (7 in a
circle), villous at tip -
a little tuft of hairs.
..... united bases of pappus,
forming a cup.

... ovary

Cont. p. 341.

July 4, 1940.

Bracts of receptacle membranous,
midrib-keeled, linear, slightly
dilated at the herbaceous-spot
apex, the apex villous. The
outstanding peculiarity of the
head is that the corolla are covered
and partially concealed by the tuft
of ^{villous} hairs on the tips of the bracts
of the receptacle!

* Cont. from p. 339, ^{at top,} no. 20, 139. The
stamens are only slightly exerted
from corolla; the styles long-
exserted!

** Cont. p. 342, ^{at **} This is Little Row Creek!
cf. Fault Map of Cal. 1922. Coming
westerly off Round Mtn., the road
first follows Cedar Creek which joins
Little Row Creek ^{a little} above Jugot. See
also p. 349 at bottom.

— Cont. from bottom p. 337. At Montgomery Creek I note *Quercus garryana* but did not collect it (observative from car). Below Round Mtn., over which I pass next, I observe: *Pinus sabiniana*, *Pinus ponderosa*, *Quercus douglasii*. I run along Little Cow Creek (or what I believe to be such — but the maps are confusing), a considerable stream which joins the road in or near the cañon bottom follows to Bella Vista. Ingot, a road sta. ^{(see p. 341), at **} is on this stream. An alternative name for Ingot, according to a sign, is "Mush Oak". Near here I observe frequent colonies of *Centaurea solstitialis*. I go on below Ingot and stop in

July 4, 1940.

the outer foothills — *Quercus douglasii* and scattered colonies of *Pinus sabiniana*. Here a fine view of Lassen Peak; far south the Marysville Buttes like an island in the sea floor of the Great Valley; westerly in the Coast Range, nw. of Redding, rises big and rounded, the (?) Bally Butte ^(see p. 424). A bit further along where the low rolling foothills soon impend, $\frac{1}{4}$ mile w. of Salt Creek, I stop again to admire a little bare hill, a cluster of Blue Oaks on its easterly summit.

I go on to Bella Vista, leave the highway and take the country road to Palo Cedro — wonderfully interesting country, open wooded hills and Valley Oak on

the valley floor. Perhaps this narrow tongue of valley floor at Bella Vista represents the extreme north end of the Sacramento Valley floor - at any rate it is continuous south to the main valley floor at Tehama and south. It is all pioneer-like country-side, little changed by civilization, and very delightful.

Near Palo Cedro I collect two *Eryngiums* (see p. 339), go on southerly, strike a cross road, turn west and soon rise off the valley floor to a wide level bench, the Stillwater Plains. Here I collect nos. 20,141 - 20,142. After which I strike some south local highway, cross

July 4-5, 1940.

the Sacramento River, here a fine broad river, and reach Anderson. Thence to Red Bluff for a dinner at 4:00 o'clock. At 5:00 o'clock I start for Little Oak near Vacaville, which I reach at 8:15, with only one stop at Willows for servicing the car. Next morning to Berkeley.

- Clausen,

from Cornell Univ. is here today, July 16. He is collecting for the herbarium at Cornell; comes from ^{the east via} S. Cal. and is on his way n. to Oregon. Primarily interested in *Sedum*. He failed to find *Sedum pinetorum* at Pine City near Mammoth, Mono Co. on July 13 this year, - July 13

being the date of the original collection by Mrs. Brandegee.

- Called today John Thomas Howell, Assistant Curator at the California Academy of Sciences Herbarium. He has been on a collecting trip to Modoc Co. with Alice Eastwood. Miss Eastwood, he says, does not like to stop long in one place. She cannot ^{nowadays} move around to collect and so she soon wishes to be somewhere else. One night they stopped in Klamath Falls, Oregon; the next night in Reno, Nevada; the next night at another distant place - hopping hurriedly around from one point to another far distant. Real light on Mr. Howell's relation to this trip came out when he told

July 22, 1940

of his own forthcoming two weeks vacation. "It is my own. I am going to do as I please. I am going into the Sierras up on Gibbs Creek above Kings River. I am going where I please each day, and do what I please. The place is a "permanent" (for the outing period) camp of the Sierra Club Outing Party. I can ^{do} just as I like all day, go out when I please and stay as long as I please." - All this was said most earnestly and quite plaintively. - July 22, 1940. I took Howell to luncheon and enjoyed good food, both of us, and had more good talk. Howell's plan to do as he wants on his vacation and his talk about _{it} is quite jolly!

Berkeley, Aug. 15, 1940

- Called this morning Professor John T. Buchholz of the University of Illinois. He is working in the embryology of the conifers, also on the anatomy and plans to correlate results with the external form or gross morphology. His attitude seems to me a sound one. He has come to California to look for cultivated Old World conifers. He remarked that I helped him much when he visited me a year ago, though I cannot now recall what I did. He is looking for *Taiwanica* of Formosa - but I could not off-hand give him a lead on that in our local gardens.

- Dr. Francis W. Pennell has been here in Berkeley for a few days, using Life Sciences Bldg. as headquarters for his trips about California collecting.

Berkeley, Aug. 20, '40.

Scrophulariacae. He and his wife I had to luncheon today, Aug. 20, just before ^{Fisher's} leaving for S. Cal. He says he expects to get home to Philadelphia in time for the Bicentennial Celebration of the University of Pennsylvania. An invitation came to me for this event but it does not seem likely I can attend. - 5-20-40.

No. 20,143. *Erigeron Conyza bonariensis* (L.) Cronq. In dry hard soil of walk along west side of Stadium, Berkeley. Aug. 8, 1940.

- Rain, a little, fell on Sept. 1 and more on Sept. 4, - breaking the summer's drought period. Again on Sept. 17 in early am.

- Sept. 8, '40. Went to Vaca Valley and Rockville.

- Cont. from bottom p. 341. cf. also Redding Quadrangle where it is also Little Cow Creek. Note that Cow Creek turns or goes easterly at Palo Cedro, and that east of Millville it forks into

Old Cow Creek and South Cow Creek.Berkeley to Salinas ValleyLeft Berkeley at 1⁰⁰ pm., ^{Oct. 2, 1940} Wed., Oct.

2. Drove to Salinas and put up at Hotel Camino. As I sometimes

get caught, for over-night, at Salinas

I must look up a better hotel. ^{Next morning} Drove up the Salinas Valley.Near Jonzales I collect: ^{Oct. 3, 1940}"No. 20, 144. ~~Eriogonum~~ ^{Coryza} ~~canadensis~~ ^{(L.) Cory.}
Single stem, simple up
to infl., 3½ ft. h."No. 20, 145. *Franseria*Branches from near ground,
diffuse, 12 - 15 in. h."No. 20, 146. *Lactuca scariola*
4 to 6 ft. h.Near San Ardo, I collect:"No. 20, 147. *Stephanomeria virgata*notice the sea-green
stems and pink ligules. 2½ to
3 ft. h."No. 20, 148. (*Isoetes*) ^{Haplopappus} ~~varietal~~ ^{ssp.}
peronioides Bushy, 3 ft. high. Valley
(Nutt.) Hall flat, San Ardo."No. 20, 149. *Senecio douglasii* DC.
Dry hills, 2 to 3 ft. high,
San Ardo."No. 20, 150. *Eriogonum elongatum*
Long erect branches
arising from a woody base, making
a bush 3 to 3½ ft. high. Dry
hillsides, forming a marked colony
on a steep bank."No. 20, 151. *Datura meteloides* DC.
San Miguel. Diffuse plants."No. 20, 152. *Henizonia Kelloggii* Greene
H. pentactis Keck Atascadero, dry fields.
↑ open
Rays yellow."No. 20, 153. *Lagophylla ramosissima*
Nutt. Dry open fields. Atascadero.

At San Luis Obispo I secured some road maps from the office of the Southern California Automobile Club; got a bottle of cold milk from the Home Dairy; and went on south. Near Arroyo Grande, I collect:

- no. 20,154. *Hemizonia paniculata* Gray
Dry bank. Entire plant is taken but ^{on} one side the branches are mostly removed to lessen bulk, since it is very thickly branched, but seems to be the same as the next number, taken within a few feet which has but a few branches, is extremely open, is taller.

- no. 20,155. *Hemizonia paniculata*
Gray cf. no. 20,154.

- no. 20,156. (*Isocoma*) *Haplopappus venetus* ssp.
Veronoides (Nutt.) Hall Bush 2 to 2 1/2 ft. high, the branches erect, long, simple, arising from the main stems of the heavy-woody base. The branching is mainly low or basal. Dry flat. Arroyo Grande.

- no. 20,157. *Baccharis pilularis* var. *consanguinea* (DC.) Kuntze
♂ and ♀ Dry flat near Arroyo Grande. Over hundreds of acres in this region it is a pioneer on the open grassy hills, forming a thin but open stand.

I drive on to windy Santa Maria, thence to Los Alamos, thence through the Gaviota Pass to Santa Barbara where I put up at Hotel Faulding on East Haley st. for the night.

This morning at 7:30 I drive south to Ventura, pick up some road maps at the S. Cal. Auto Club, go on south to the coast road via Oxnard. First I make a stop near Los Sances Creek, c. $2\frac{1}{2}$ mi. nw. of Ventura (a beach spot called by the non-distinctive name of Sea Cliff. Here I collect nos. 20,158 to 20,172. I stop, again, on the flat, near the beach, 2 mi. se. of Oxnard, a hill rising up to left of road. This is close to Laguna Mugu. Here I collect nos. 20,173 to 20,177 (see p. 357).

No. 20,158. *Atriplex*

Rather dense bush 4 to 6 ft. high and 6 to 10 feet broad. Sea beach.

No. 20,159. *Bidens*

Dry flat back of beach. Common.

No. 20,160. *Solanum*

Stems long (4 to 6 ft.)

and trailing or decumbent, arising from a central woody stem, the trunk 1 inch diam. ^{branched} dry flat.

No. 20,161. (*Isocoma*) *Haplopappus venetus* ssp.

vernonioides (Nutt.) Hall Bush, 4 ft. h., stems loosely erect or a little spreading. Hillside by beach.

No. 20,162. *Erigeron Conzattia bonariensis* (L.) Cronq. dry flat.

No. 20,163. *Asteriscia californica* Less. Thick bush 4 to 5 ft. h.,

4 to 7 ft. broad. Hillsides.

No. 20,164. *Ambrosia pilostachya* DC. ~~*franseria*~~

Abundant on the flat next the beach.

No. 20, 165. Elymus condensatus Presl.

This reed grows in very heavy stools, 6 to 8 ft. high and 3 to 5 ft. broad. Flat back of beach.

No. 20, 166. Artemisia douglasiana Bess.

Stem erect, 4 to 5 ft. high. Moist flat back of beach.

No. 20, 167. Heliotropium curassavicum L. var. oculatum (Heller) Jtn.

Corolla white, soon becoming purplish, especially in center (throat). Anthers with an acuminate tip, valvately closing entrance to cor. tube in early anthesis, on dehiscence spreading and lanceolate with narrowed tips.

No. 20, 168. Heterotheca grandiflora Nutt. 2 to 3 1/2 ft. h.

Dry bank back of beach.

No. 20, 169. Elymus condensatus Presl.

This is the same reed, I take it, as 20, 165. 7 to 8 ft. h.

No. 20, 170. Datura meteloides DC.

No. 20, 171. Atriplex

Bracts becoming fleshy so as to form a sort of pink "berry". Stems radiating from a central root-crown, decumbent, forming a sort of loose mat 4 to 7 feet broad. Dry flat.

No. 20, 172. Atriplex

Vegetative shoots from the same bush as no. 20, 158.

Laguna Mugu, 2 mi. S. of Oxnard,

Oct. 4, 1940.

No. 20, 173. !

A true bush, 3 to 3 1/2 ft. h., the flowering branches arising from distinctly woody stems below. Woody base branched, 1 ft.

high; main trunk 1 inch diam.
Branches of the season dying
back. Rays pink, 18, 17, 19, 15, 16, 19.
Cor.-lobes ciliate. Disk yellow. Ovary white.
Hirsute with short ascending hairs. Cont.

No. 20, 174. *Eriogonum cinereum* ^{p. 359.}
Bush, dense, 2 to

2 1/2 ft. h.; rounded. On hillslope.

No. 20, 175. *Malacothrix saxatilis*
~~var. tenuifolia~~ The stem of this cichor-
iad is simple below, openly
branching above. Ligules pale
white, pink on back, 5-toothed
at apex. Pappus bristles rather
few, denticulate. Widely branched
stem, 5 to 7 ft. high. Heads in
anthesis 3/4 to 1 inch broad.

No. 20, 176. *Briacellia*

This bush, dense, rounded,
3 ft. high, grows on the steep
hillslope. Composite heads in bud
only.

No. 20, 177. *Staphanomeria virgata*
Ligules pink. Plant
2- to 3 feet. high. Dry hillslopes.

Normalk, Los Angeles Co.

(3 mi. se.) Oct. 4, 1940.

No. 20, 178. (*Isocoma*) *Haplopappus*
venetus
vernonioides Bush, loose, 2 to 3 ft.
(Nutt.) Hall
high. Covering as a marked
dominant a field of about
20 acres.

- Cont. p. 359, no. 20, 173. Involucres
from imbricated, the free tips of the
bracts minutely but densely gland-
ular.

From Normalk, I turn on Fire-
stone av., at Buena Park, east
to Fullerton, where I put up at
the Park Hotel for the night. The
next morning I drive east to
Rancho Santa Ana.

360 Rancho Santa Ana Botanical Garden, Oct. 5, 1940.

After luncheon in the Administration Building, the Council met in the Herbarium at 2:00. There were present: Mrs. E. A. Bryant, Managing Director; Allen Chickering, President of the Board of Trustees; Mr. Howard of Howard-Smith Co., Nurseryman, Los Angeles; Theo. Payne, Nurseryman, Los Angeles; Dr. Everole, ^{Seedsman and} Los Angeles; Stuart O'Melveny, Los Angeles; Dr. and Mrs. Morgan, Cal. Institute of Technology; Alice Eastwood, California Academy of Sciences; ^{Woglom,} some division (entomology maybe) of U. S. D. A., Los Angeles; Dr. H. J. Webber, Citrus Experiment Station, Riverside; and certain members of Mrs. Bryant's staff: Dr. C. B. Wolf; Everett; Mr. Johnson, Superintendent of the Rancho Santa Ana,

Rancho Santa Ana, Orange Co., Oct. 5, 1940. 361

and possibly one or two other councillors whose names escape me; and myself. By invitation of Mrs. Bryant I read a paper upon the garden, its practical objectives, its scientific ideals, an enunciating outline of its future course. This paper, which at the end, was received with much applause.

Another councillor present was Prof. P. A. Munz of Pomona College.

For the night I was a guest (see p. 353, ***) at the Garden, and the next morning I had a two-hour session with Mrs. Bryant regarding the problem of publications. (see p. 376 ***) About 11:00 o'clock I drove to Santa Monica, called for a few minutes on my old-time friend, Dr. D. D. Beckwith, and stayed the

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Horseshoe Bend, Santa Ana Cañon,
Orange Co., Oct. 6, 1940.

night at the Hotel Broadmoor. On
the way from Rancho Santa Ana
to Santa Monica I collected at

Horseshoe Bend, Santa Ana Cañon,
Orange Co.
the following:

"No. 20, 179. *Ambrosia palostachya* DC.
~~transva~~

Common on rich flat.

"No. 20, 180. *Helianthus annuus*
freely branching and
and erect, or diffuse, 4 to 6 ft.
high.

"No. 20, 181. *Bidens*
3-4 ft. h., rich flat.

- *Datura meteloides* DC.

- *Heterotheca grandiflora*.

Santa Monica, Oct. 7, 1940

"No. 20, 182. *Stephanomeria virgata*

Dry hills

"No. 20, 183. *Eriodia californica* Vott.

Rays yellow. Shrub 3 to 4
ft. high.

Santa Monica, Oct. 7, 1940.
(Sepulveda Blvd.) (Los Ang. Co.)

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"No. 20, 184. *Lepidospartum squamatum* (Gray) Gray
Dense bush, 2½ to 3½ ft.
high. Rays none.

"No. 20, 185. *Malacothrix saxatilis*
var. tenuifolia Heads, white, the lig-
ules pink on back. Loosely
branching 3 to 4 ft. high.

Calabasas, Los Angeles Co.

Oct. 7, 1940.

"No. 20, 186. *Trichostema lanceolatum*
Bth.

I drive on through Russell Val-
ley to Ventura and put up at the
Hotel Hoover. It is only 2:15
o'clock - but my back is a bit
sore from long driving and the
strain of the meetings, - and
so I stop over night. In the
evening I visit the City Library
- a fine building set back from the
street in a small park. The col-
lection of books seem unusually
well-selected. Good biography,

history, travel. The next morning, Tuesday, I drive to the Ojai Valley and collect:

"No. 20, 187. *Erigeron* ^{*Corryza canadensis* (L.) Gray}
dry flat. Ojai Valley.

"No. 20, 188. *Hemizonia heermannii* (Greene) ^{Kelch}
Ojai Valley, Valley flat, 4-5 ft. h.

"No. 20, 189. *Senecio douglasii* DC.
Bush 3 to 5 1/2 ft. h.

Wheeler Hot Spgs. Hill-slopes. c. 2000 ft.

"No. 20, 190. (*Isocoma*) *Haplopappus squarrosus* H. & A. Loose bush 3 to 4 feet high. Wheeler Hot Spgs. Hill-slopes. c. 2000 ft.

"No. 20, 191. *Beaumontia*
14 ft. h., as broad.
c. 2000 ft. Wheeler Hot Spgs.

- Near Wilcox P.O., (Wheeler Hot Spgs.)
Ojai Valley: *Juglans californica*; *Platanus racemosa*; *Quercus agrifolia*; *Pinus lawsonia*; *Adiantum fasciculatum*; *Salix apiana*.

"No. 20, 192. *Brickellia* aff. *californica* Bush 4 to 6 ft. h., composed of numerous stems from the base (these stems 1/2 to 3/4 in thick) which give rise to the flowering branches. See 20, 193.

"No. 20, 193. *Brickellia Nevinii* Gray Rounded bush with many stems, 2 to 3 1/2 ft. h. This grew with 20, 192, near bottom of a hillside gully. In the gully was a living stream of water, small but active. See 20, 194.

"No. 20, 194. *Baccharis glutinosa* Pers. Numerous erect stems from base, forming a loose bush 6 to 8 feet high. Grows with 20, 193.

"No. 20, 195. *Chrysothamnus* ^{*nauseosus*} var. *mohavensis* (Greene) Hall Bush on open hill-slope in the thin low chap-

aral, the main stem trunk many, these trunks $\frac{1}{2}$ to 1 inch diam. and giving rise to shoots* which in turn produce a broom of flowering shoots of the season. * a portion of one of these shoots is taken with my spec., that is, a portion of the shoot with its "broom."

"No. 20, 196. *Eriodictyon trichocalyx* Hal. Bush 3 to $5\frac{1}{2}$ ft. h., 6 to 12 feet broad. Open dry slopes.

"No. 20, 197. *Eriodictyon trichocalyx* Hal. Sterile, shoots of the preceding leafy.

"No. 20, 198. *Cordylanthus rigidus* (Bth.) var. *nylvaticus* Jepson. 4500 ft. Summit of ridge at head North Fork Matilija Creek. Dry flat. Erect, $2\frac{1}{2}$ to $3\frac{1}{2}$ ft. h. The three folders taken represent sections of one individual.

"No. 20, 199. *Cordylanthus rigidus* (Bth.) Jepson var. *nylvaticus* - Small colony (2 feet square) of what seem like fasciated or diseased individuals. They are all small, some much smaller than those taken in the folder. With the preceding number.

"No. 20, 200 *Corethrogyne filaginifolia* (Nutt.) var. *glomerata* Benth. This composite with purple rays is largely past flowering. With preceding.

"No. 20, 201. *Grappalium* Dry flat, with 20, 198. One folder shows the short sterile shoots which form a small tuft at base. Annual; 3 to 4 ft. high.

"No. 20, 202. *Cordylanthus rigidus* (Bth.) var. *nylvaticus* Jepson. With 20, 198.

"No. 20, 203. *Eriogonum elongatum* Benth. Stems several from base forming a loose or open bush 3 to 4 ft. high, the lower $\frac{1}{3}$ woody.

- ✓ No. 20, 204. *Rouneya coulteri* Harv.
Loose bush, the
stems 3 to 5 ft. high, growing
on a very rocky slope in the
rocks but near the bottom of
a ^{little} gully. This site is just over
the summit a short distance on
the Sespe Cañon watershed.

Sespe Gorge, cañon bottom, Ventura
Co., Oct. 8, 1940. c. 3800 ft.

- ✓ No. 20, 204a. *Zauschneria californica* Presl.

- ✓ No. 20, 205. *Artemisia tridentata* ^{Wats.}
Ph. Bottom of Sespe Gorge,
at Tule Creek junction with Sespe
Creek. Saw relatively little of it.

- No. 20, 205a. ^(Discarded) *Datisca glomerata*

- ✓ No. 20, 206. *Gutierrezia bracteata*
Abrams Rounded bush $1\frac{1}{2}$ to
 $2\frac{3}{4}$ ft. high, the numerous
flowering stems arising from
a branched woody base $\frac{1}{2}$

- to 1 ft. high. Rays few. *Cichoriacea*

- ✓ No. 20, 207. *Stephanomeria*,
Bush, many simple
stems from base, erect-spreading,
 $3\frac{1}{2}$ to 4 feet high. Heads large,
deep pink, the ligules recurving,
that is, spreading backward.

- ✓ No. 20, 208. *Solidago*
Stems simple below,

- branching above; forming colonies or
directly ^{often} heavy stools 4 to 5 ft. high.
Cañon bench next to bed.

- ✓ No. 20, 209. *Solidago*
Hill slope; colony; 2
to $3\frac{1}{2}$ ft. h.

- ✓ No. 20, 210. *Stephanomeria virgata*
Bushy habit, $1\frac{1}{2}$ to 2
feet high. Ligules pale pink with
2 dark pink bands on back
— *Populus fremontii*; *Photinia arbutifolia*;
Pseudotsuga mucronata (a half-dozen
trees on top a steep bank, i.e. on face of bank)

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Seefe Jorge (cañon bottom)
 n. Ventura Co., Oct. 8, 1940, c. 3800 ft.

✓ No. 20,211. *Clrysanthamnus nausc-*
osus (Pall.) Britt. var. ?

• Pine Mt., ^{near} Ventura Co., Oct. 8,
c. 5000 ft. 1940

✓ No. 20,212. *Pinus monophylla*
 Torr. & Frem. Trees thick, rather
 rounded, 10 to 20 feet high.
 A considerable colony. See also
 cones in cone collection.

✓ No. 20,213. *Artemisia tridentata* ^{Nutt.}
 Pine Mt.; wash.

✓ No. 20,214. *Eriodictyon trichocalyx*
 Hal. Shrub 4 ft. h.

✓ No. 20,215. *Pentstemon*
 With 20,214. Hill-
 slopes.

- From the summit of Pine Mt. one
 looks northeastward over a great
 series of ridges, ridge after ridge,
 stretching in the far (Cont. p. 371)

Buyama Valley, Oct. 8, '40. 371
 n. Santa Barbara Co. c. 3100 ft.

nauscus
 No. 20,216. *Clrysanthamnus*
 var. *graphalodes* Bush 3 to 4 ft. h.
 (Greene) Hall

✓ No. 20,217. *Clrysanthamnus*
nauscus var. *mohavensis*
 (Greene) Hall Bush 3 to 4
 ft. high.

No. 20,218. *Clrysanthamnus* - same
 det. as #20,217. Bush, 3 to 4 ft. h.

✓ No. 20,219. *Clrysanthamnus* - same
 det. as #20,217. Bush, 3 1/2 ft. h.

nauscus
 No. 20,220. *Clrysanthamnus*
 (Greene) Hall var. *mohavensis* Bush 1 1/2 to 2 ft. h.

- Cont. from bottom p. 370. distance to
 the borders of the San Joaquin - a
 little scrub on them but not much -
 all with broken bare areas - evidently
 fire-burned for centuries. Soon,
 driving down Pine Mt., I reach the
 Buyama Valley floor. A backward
 look shows Pine Mountain very
 well covered on the northeast slope
 with *Pseudotsuga macrocarpa*. 2

^{saw} no *Pinus ponderosa* on the way over and of course no *Abies concolor*. Pine Mountain, I take it, must have been so named by persons looking up at it from a distance - it looks pine covered. And in this region, where all coniferous growth is so scarce, the name is distinctive. (See p. 372 *)

On the Cuyama Valley floor I pass, to the right a dirt road leading off the highway towards Mt. Pinos. To the left, as I travel northerly is Cuyama Peak, sw. of Ventucopa sta. From this station I note ^{in the far distance} a ^{northernmost} landmark peak rising beyond the Cuyama River and lying in San Luis Obispo County. I ask a man at the station what it is. He does not know; so I turn to my map: Caliente Peak. Directly north,

on the Santa Barbara County line is a line of light-colored hills with whitish spots or areas here and there. These are the White Hills of botanical labels.

I drive north from the Ventucopa sta. and soon rise grandly to the west the Sierra Madre range ^(of modern maps) in Santa Barbara County. I reach the east-west highway from Santa Maria ^{to Maricopa} turn east and pass over the very low divide of the inner Coast Range and coast down the east slope to Maricopa, thence to Taft where I put up at Hotel Savoy for the night.

* from p. 372. *Psuedotsuga macrocarpa*: the stand is 40 to 60 ft. h., the crowns lightly but conspicuously cone-bearing. I notice no young growth - all mature trees.

— Maricopa and Taft lie behind, to the west of, the first low range of foothills on the west side of the San Joaquin Valley in this region, on a valley floor (Midway Valley, 1000 feet, as against about 325 on the plain proper). The foothills named are the Elk Hills and Midway Hills. Midway Valley opens out southeasterly on to the San Joaquin plain.

I take the road to McKittrick. Northward from Taft $1\frac{1}{2}$ mi. about I collect:

✓ No. 20,221. *Franseria acanthicarpa* (Hook.) Cov. $1\frac{1}{4}$ ft. h., several stems from base, ascending, branching; annual. Dry flat.

✓ No. 20,222. *Helianthus annuus* Erect, branching, spreading loosely, $3\frac{1}{2}$ ft. high. It

Oct. 9, 1940.

is between this point and San Jose often common along the roads and 6 to 8 feet high.

No. 20,223. *Gutierrezia bracteata* Abrams Erect bush; stems of spm. taken nearly at ground.

No. Kettleman Plain, w. Kings Co.
Oct. 9, 1940.

✓ No. 20,224. *Trichostema a. lanceolatum* Bth. This is the dominant on the dry dead-grassy rolling plain bordering the Kettleman Hills, 9 to 18 in. high. It is the only living thing on the plain save *Gutierrezia* (No. 20,225) and *Eriogonum setigerum*, both of which are very subordinate. The plants are somewhat bushy in this way: The main ^{stem} is short or shortly branched and 1 to 6

inches high; from this base arise the simple ascending branches. The leaves, markedly ranked, are involute in such a way as to be nearly tubular; they are slightly curved downward.

- "No. 20,225. *Gutierrezia bracteata* Abrams Small bush 4 to 7 inches high, woody-based. (One-fourth of plant taken in this specimen). Very thinly scattered over the plain - never in colonies.

-Cont. from p. 361 at *. See my letter to Mrs. Bryant dated Oct. 10, Oct. 15 and Oct. 25, 1940. See also my letter to Dr. H. J. Webber of the Citrus Experiment Station, Riverside, dated Nov. 6, 1940. *Jepson Correspondence*.

- "No. 20,226. *Franseria acanthicarpa* (Hook.) Coville Annual, bushy - branching, 5 ft. high, erect.*

- "No. 20,227. *Lepidospartum squamatum* (Gray) Gray

This switch composite forms a rather dense broad bush 2 to 3 1/2 ft. high, and 3 to 6 ft. broad.

Los Gatos Creek, sw. Fresno Co.
c. 2000 ft. Oct. 9, 1940.

- "No. 20,228. *Gutierrezia bracteata* Abrams Not uncommon in the cañon in places. Stem taken at ground. Mostly 2 1/4 ft. h.

- "No. 20,229. *Senecio douglasii* DC. Bush 3 ft. h. Woody part of bush 1 1/2 to 2 feet high; trunk at ground 1 inch * spurs taken represent terminal portion of an axis or of a branch. Stems simple below.

diameter. Rays 8, 8, 9, 8.

"no. 20, 230. *Haplopappus* ^{*acradanius*} ~~*venetianus*~~ var.
veceporioides Erect bush 3 ft. h.,
(Nutt.) ~~Munz~~ *bracteatus* M^cMinn
rays none.

"no. 20, 231. *Eriodictyon tomentosum* Bth. Colonies; shrub
5 to 6 feet high.

"no. 20, 232. *Baccharis glutinosa*
Perr. 8 to 9 ft. h., bed
of Los Gatos Creek.

"no. 20, 233. *Haplopappus acra-*
denius ssp. *bracteatus*
(Greene) Hall Many-stemmed
shrub, dense, 5 ft. high.

"no. 20, 234. *Artemisia dracunculoides*
4 to 5½ feet
high; stems erect.

"no. 20, 235. *Gordylanthus rigi-*
dus (Bth.). Forming a dense
colony of a half-acre, 3 to
4 feet high. Specimen taken
in four sections from top

to bottom in as many folders,
labeled "a", "b", "c", "d".

"no. 20, 236. *Gordylanthus rigidus*
(Ath.) Jepson. With 20, 235.

- I stop under a *Quercus lobata*
tree, on a little bench, half-way
up the cañon for a mid-day
lunch. I have forded the stream
nearly twenty times to this
point. Going on up to the
divide (headwaters of branch of
San Benito River) I ford it
15 times more. I keep no
count; but one is really moving
up the stream bed and
leaving it for only short dis-
tances on a hillside or bench
and then back to the cañon
bed again.

- I cross the divide (see p. 379)
and go down the slope and
along the San Benito River, cross-
ing it repeatedly, to Hernandez
Valley, where I collect:

No. 20, 237. *Chrysopsis*

Many-stemmed,
9 to 19 in. high; gravel bed
of San Benito River.

No. 20, 238. *Lepidospartum squamatum* (Gray) Gray

This composite bush
is 1½ to 2 ft. high.

No. 20, 239. *Claytonia* ^{nauseosus}
(Greene) ¹
var. *mohavensis* Hall Cushman 3 ft. h.

I climb over the ridge west
of Hernandez Valley to the head-
waters of Lorenzo Creek, follow
down Lorenzo Creek to the San
Benito River, ^{see nos. 20, 240-2,} thence along it,
then over the ridge westerly to
the northeast arm of Bitterwater

Valley. Near Lorenzo Creek mouth I collect
No. 20, 240. *Madia Blepharizonia*
plumosa var. *visida* Koch I take a whole
plant in sections: a; b; c;
from top to bottom. Dry hillside

No. 20, 241. *Cordylanthus*
dry hillside

No. 20, 242. *Eriodictyon californi-*
cum H. & A. Small colony;
with 2 preceding.

- *Eriogonum fasciculatum*. See p. 383.

Bitterwater Valley (NE arm, near
foot of grade that goes east over ridge
to San Benito River); San Benito Co.,
Oct. 9, 1940.

(See also p. 383)
No. 20, 243. *Eriogonum elongatum*
See p. 383. 3½ to 4 ft. high.

No. 20, 244. *Salvia mellifera* Greene.

Dry Lake Valley, San Benito Co.,
Oct. 9, 1940.
On a piece of plowed land grows
a large colony of (Cont. p. 382)

No. 20, 245. *Hemizonia Lobbii* Greene
Dry hillside

Rays yellow.

— I run on northerly to Holister, — thence to Berkeley, arriving home at 9:30 in the evening; having started from Taft at 6:00 o'clock this morning — and crossed the Coast Range by the most difficult, by far, of all roads in that region.

— Cont. from bottom p. 381. *Eriogonum setigerum*. They are, as usual, spaced a little and are so large that at a little distance and a first glance they look like small hay-cocks! It is an example of a native species that has adapted itself to ^{certain} agricultural conditions.

— After a most beautiful and rather dry October the rains are now starting in for winter apparently.

— Cont. from p. 361 ante at **. For some further details of this meeting see "Men and Manners," vol. 13, p. 339 (Private Journal W.H.J.). See p. 394 at **.

— Cont. from p. 381 at middle. This *Eriogonum* with its broad body rather densely topped with inflorescences is now a marked feature of the hillslopes or brushy areas in many places. The "heads" have now turned a deep reddish-brown, so that the shrubs everywhere show up in contrast to chaparral vegetation generally: at the station for 20, 243; at Lorenzo Creek; along the upper San Benito River.

— Cont. from Bitterwater Valley, p. 381. Between the "foot of the grade," see p. 381, and Little Rabbit (Cont. p. 384)

This morning I left Berkeley about 9:00 o'clock and drove to Vacaville, going first into Gates Cañon. Then I drove across the valley and up Gibson Cañon and over the little divide, so that soon I could see
(Cont. p. 385)

- Cont. from bottom p. 383. Valley, I notice on the high slopes northward by a lone *Quercus lobata*. ^{Here} from its whole structure it must be that species certainly - though seen at a considerable distance. It is remarkable for its size and its remoteness on so high and so barren a slope; that is the other very scattered ones are small or insignificant. - Yet again, in Bear Valley, just north, on the high slopes eastward I note many very large oaks.

Nov. 19, 1940

out over the Sacramento plain. The day is a very fine one - North wind has cleared the air in the Coast Range - but the Sierra Nevada are hidden by haze. I drive on, down the cañon (through the English Hills) and come out into the low rolling plain bordering the ^(on east-west road, see p. 392 at *) hills, and pick up the highway from Vacaville to Winters. In ^{perh. 30} yards I turn north, ^{++ see p. 393.} off this highway and go through the Brown's Valley settlement and finally come to Sweney Creek on this north-south road. Here I turn west, into Peaceful ^(see p. 393 at **) Glen. I pass the Peaceful Glen school and in about a half-mile turn north on a local road. In about two miles I come to the old Mueller ranch - low bare rolling hills

now being plowed for winter wheat sowing. J. M. Brazelton comments on this place. He is here in charge of farming operations. A small winter creek runs past the old farm buildings site. He points up the gentle slope and says that in the swale along the gully there was twenty-five years ago a thick stand of willows and cottonwood (*Populus fremontii*) - the tiny "creek" so screened by them that a band of cattle could be hidden there! - that there was always water seepage and ^{something} of a little stream in the rainy season. Now quite gone! (See p. 391).

I spoke about the cutting of the oak and manzanita in the Vaca Mountain foothills. He said to himself had

taken out 4500 cards since 1911 on his place near Dutton Canyon. I drive back to Sweeney Creek and stop near the site of the old-time Talbot farmhouse. There is a little wind and I go down into the creek bed and find a quiet sunny place to eat my mid-day meal. In the old days there was considerable timber along this stream: willow, Fremont cottonwood, a little *Quercus lobata*. Now there is very little. In the creek bed and on the banks of the creek wall I collect the following:

No. 20, 246. *Sorghum halepense* (L.) Pers.

This grows in the creek bed.

No. 20, 247. *Chenopodium*

on the sloping bank,

4 1/2 feet high.

No. 20, 248. *Cyperus*
Sweeney Creek bed.

No. 20, 249 *Ambrosia psilostachya* DC.

This composite grows
on the steep bank of the creek;
1 1/2 to 3 feet high.

No. 20, 250. *Verbena robusta*
Greene. 1 1/2 to 2 1/4 feet
high. Steep bank of the creek.

No. 20, 251. *Madia elegans* ssp.
densifolia (Greene) ^{Reck} Raze yellow. Main
axis densely leafy, ending
above in a panicle of heads.
Later on, after flowering is terminal
panicle is pretty well passed,
then in the lower part of
plant (the densely leafy axis) are
produced tiny panicles. Probably
this lower flowering is precipitated
by the early fall rains and
the warm weather. Admits flat in
Peaceful Glen.

I drive to Vacaville, take on gasoline,
and run west on north side of Davis
Hills to the old Brazellm place. I
turn left from the ranch house
and go through the orchard
southerly and westerly into a
little cañon flat where I park
my car and climb the hill
to the north. Here I find consid-
erable manzanita (*Arctostaphy-
los manzanita*): an individual
in a fence corner next the
orchard about 13 feet high, the
trunk about 17 inches across at
a foot from the ground. Above
it, on the hillslope, about 25 ft.
is a sprawling individual -
about nine trunks from base,
mostly sprawling down hill
and resting on the ground,
3 nearly erect and about 14
feet high. There is much

dead trunk and dead branches in this huge sprawling individual. A lot of this species has been cut out of this little cañon - but there is a good deal left. These shoulders where I find it are say 200 ft. or only above the valley floor. I am plainly wrong in Fl. Cal. vol. 3, pt. 1 in saying this species is rare in the Vaca Mountains. I have no doubt it occurs in similar situations in the foothills of the main range as far as Putah Creek in all probability. Surely there has been a lot of it here in this place before being cut for firewood. When I was a lad there was a lot of it. I assumed that continued and repeated chop-

arral fires over many decades had about killed it out - but there is a good deal left.

No. 20,252. Arctostaphylos manzanita Parry. See p. 389. - Cont. from p. 386. Probably the whole Peaceful Glen district had, along the water-courses, more trees in early days than now. In this connection: J. M. Hazelton said that forty years ago and more the oaks in the main foothills of the Vaca Mts. were much larger and finer than today - so much has been cut out for firewood. As he said: "There were lots more nice picnic places then now." He referred mainly to the Live Oak (Quercus wislizenii) and Blue Oak (Quercus douglasii).

I have referred to Populus fremontii along Sweeney Creek, ^{See p. 386.} It occurs still along both Matias and

Alamo creeks, especially along the Alamo. There is, or was, a little of it in the lower part of the cañons on the east slope of the Arequipa Hills — in Osage Cañon there was, I think, a few trees. But south of Pigeon Point there are none in the cañons if I remember rightly. There are ⁱⁿ a few along a surface winter water-course to the north of the old "poor-house" road, — but I have always thought they were planted. They are very isolated and I've noticed no reproduction. I recall no Cottonwood in Guisun Valley.

* Cont. from p. 385. On this road, both sides of road are piled high with Tumble-Weed (*Amarantus retroflexus*), piled high in great mounds against the fence lines and extending to the wagon tracks in center of road.

I have never seen so much of ^{it} a loc at Little Oak, when in the fall it ran tumbling over the fields in the north wind. In these latter decades I have noticed it scarcely at all about Little Oak. The road ^{turning north,} referred to, p. 382, th runs at once into Browns Valley.

— Cont. from p. 385 at **. For another account of this trip, see "Men and Manners", (personal notebook), vol. 13, p. 350.

— Climate and rainfall. During the fall there were occasional well-spaced light rains which made green hills in many areas and later green valleys. The first real thorough-going rain-storm broke Dec. 16-17, 1940, providing a drudging for the earth. — That storm is still continuing. Very heavy rains in last few days. — Jan. 7, 1941. See p. 394.

Berkeley, Jan. 28, 1941.

- Dr. Rogers McVaugh, Care U.S. Pl. Explor. + Introd. 12th St., N.W., Washington, D.C. Wrote him Dec. 27, 1940. He is asking for *Carl. Lobeliaceae*.
- Cont. from p. 383 at * *. Also see letters in *Jipson Correspondence* dated Oct. 10, 1940; Oct. 15, 1940; Oct. 25, 1940.
- Dr. F. A. McClure, Professor of Botany in Lingnan University, Canton, China, called on me Jan. 28, 1941. Took him to luncheon the next day. A highly interesting man. Told of the fall of Canton before the Japanese army - the flight of 1 1/4 million Chinese. See an account of this and his visit in *Men and Manners* (private journal W.L.J.), vol. 13, p. 434.
- Cont. from bottom p. 393. The rains continued daily, without noticeable interruption until about Mar. 5.

Berkeley, Feb. 7, 1941

- Mr. Reid Moran, graduate student here, formerly Stanford University, called Tuesday, Feb. 5. He is going on an expedition to the Santa Barbara Islands, which is sponsored by the Los Angeles Museum. A party of four or five. Moran, as I understand it, will be the botanist. He is a husky chap, pleasant looking, good strong features and a splendid shock of thick hair atop. He came to get suggestions - and I talked with him for an hour. Called again today Feb. 7. I have prepared for him a list of interesting species which need study and collection, on the various islands. It is not very long, since he is leaving right away, and it had to be done right off, quickly. See *Jipson Corr.*, Reid Moran, Feb. 7, 1941.

— Drove to day to Little Oak. In the lanes south of the station at Vanden, in the thin or substerile sandy soil, a zone of *Orthocarpus erianthus* is just beginning to appear - that is in flowering stage. I saw one plant of *Brodiaea laxa* in flower on Mile Square Hill. I saw a few plants of *Brodiaea capitata* in the little cañon back of the Brazelton place near Gates Cañon.

Apricots are just beginning to bloom.

Saw Clyde Whitman at Dickie ranch. He says that Common Cottonwood (*Populus fremontii*) is in the cañon of the Areguipa Hills at his ranch, the first cañon south of Pigeon Point; and also in the next cañon south, but none after that.

There are cottonwoods, maybe half-a-dozen large ones, along

the gully that drains the winter pond ^{Solano Co.} $1\frac{1}{2}$ miles sw. of Vanden station. These cottonwoods are near ranch buildings on the old Poorhouse Road (east-west road), but I imagined they were planted. However on the same road further west, in a field north side of road, are a larger number of old trees scattered along Laurel Creek near the road. These give the appearance of being natural. I do not recall any cottonwood in Lagoon Valley. *Edmonds Pond.

No. 20, 252. *Centaurea*

This composite is abundant in the north field at Little Oak, its dead stalks standing high above the low lush grass and new vegetation which hasn't yet gained much in height. No flowers of course, no fruits save remnants, no leaves. But the heads have an inner involucre which is cup-like and bears a very

dense fluffy tuft of receptacular bristles which are now whitish and make the heads at a little distance look somewhat flower-like, that is to the casual observer. By the side of the lane, west side, between the old Brook gate and the Wilson gum grove, there are dense colonies of it.

On this trip I noticed that the grass on the hills is very short. On account of the unusual amount of rain this winter, for so long a period, a greater amount of vegetation would be expected.

Vaca Valley, March 21, 1944.

This Friday I drive again to Vaca Valley. The shortness of the grass on the hills makes a marked impression on my mind. See note above. I drive to Little Oak, then up Vaca Valley to the

Riehl place behind the hill opposite the old Robinson place. Riehl says the hill vegetation is to be very short and range feed for sheep and cattle will be scarce. Although the grass started early, it did not, says Riehl, have a chance to grow.

Along the range of the Guequipa Hills *Aureus douglasii* is just coming into yellow-green heads. *Aureus californica* is in full dark green leaf.

Up the hill west from the Riehl place, not far north of the mouth of Weldon Cañon, flame two large round shrubs of *Cercis occidentalis* in full flower, with a few other shrubs of Red Bird less conspicuous.

As I drive back to Little Oak from the Riehl place I stop near the crest of the hill just north

400 Vaca Valley, March 7, 1941.

of the old Buck place at mouth of Weldon Cañon; Wells Hill, I used to call it as a lad. From this vantage ground a long prospect opens down the valley and one can see the Montezuma Hills southwesterly, lying so low on the distant horizon.

Berkeley, March 28, 1941

Leo Hitchcock, University of Washington, calls today. I take him to luncheon. We have some talk about the heavy rainfall in California this season. To my surprise he tells me that the winter has been a "dry" one in Washington and Oregon - both have suffered from lack of rain and that creeping forest fires, of a kind very difficult to put out, have been very frequent in Washington. For

Berkeley, Mar. 28, '41. 401

a further note on his visit, see "Men and Manners", vol. 13 (private correspondence W.L.G.). He has an observing instinct for possibly interesting detail. One of his remarks: "It struck me that the combination Michener & Gioletti which I see on old labels might mean a very interesting partnership." It was just that I replied and then I told him about Michener first: a hunchback, not an ordinary hunchback but an extreme type of hunchback with very short body and legs rather short and arms excessively long and a perfectly tremendous head set on this body - a magnificent intellect. And Gioletti, a short man with his face looking as if bashed in, in childhood. And both with sharp or shrewd tongues but Michener's

far more deadly as Lurchbach's are prone to be. Bioletti's stinging remarks or little jibes depressed you or questioned you; but the stiletto thrusts of adroit and powerful and even artistic skill of Michener impaled. They were of course genial to each other - reserving their attacks for individuals less unfortunate than themselves physically. In a way I liked them both; they were extraordinarily interesting characters; it increased and broadened one's knowledge of the range of human nature to know them. As for Michener, his terrible stinging darts did not bother me at all. I took them good-naturedly at one time or disregarded them at another. At that time I did not reason it out but instinctively there

was full knowledge in the depths of me that my body was large and powerfully instructed for what it had to do. As for Bioletti, strangely enough, his thrusts gave a bit of annoyance - but the annoyance was only of the fleeting moment. No annoyance that he caused was ever held or nourished. I have tried to think what some of his pointed remarks were - but it is impossible now to recall. They were instantly brushed out of memory. He had no power to hurt.

- Left Berkeley at 1:15 pm. on April 16, bound for the comic meetings, Rancho Santa Ana Botanic Gardens. It is a glorious brilliant spring day as I start on the long drive. The shoulders of the foothills, east side of the Santa Clara Valley, opposite Mt. Hill, are bronze, gold and yellow with pure madallions of green. The Salinas Valley is full green and very beautiful on its west-side slopes. As I get further up the valley in the region of Bradley the steeper slopes of the foothills east, a mile away or so, maybe two, look intensely green in certain areas. This dark deep green in pure patches puzzles but I conclude finally it is *Brassica nigra*.

April 16, 1941.

near San Miguel there is a large city - building - an army camp - training quarters - Camp Roberts. The place takes on the look of a mining camp or boom town on account of the numerous "bangers on", huge circus tents pitched close by, and so on. At Paso Robles every hotel is full, and after a poor meal in the best-looking restaurant, I drive on to Atascadero. Here both hotels are full - there is an army camp near by. I go on in the night to San Luis Obispo - again find hotels full - but get a poor room (albeit spotless linen) in the San Luis Hotel. The next morning, Thursday, after an excellent breakfast in the Paul Perriatti grill I go on to Arroyo Grande and on a hill 1 mi. s. collect as follows:

- ✓ no. 20, 253. *Hypochaeris glabra* L.
This tiny alien composite
forms dense ground colonies.

- ✓ no. 20, 254. *Trifolium*
Forms dense colonies

1 to 2 feet across - few and scat-
tered. Heads light-purple.

- ✓ no. 20, 255. *Lupinus nanus* Dougl.
This large-flowered
lupine forms broad colonies

- ✓ no. 20, 255. *Lupinus*
Individuals

numerous but tend to be scat-
tered through the other vege-
tation.

- ✓ no. 20, 256. *Trifolium gracilentum*
T. & G.

- ✓ no. 20, 257. *Lamarckia aurea* (L.)
Moench.

- ✓ no. 20, 258. *Spergula arvensis* L.

- ✓ no. 20, 259. *Azoseris heterophylla*
Broad yellow heads.

Los Alamos Valley, nr. ^{of} Santa Maria, sandy
hill, Santa Barbara Co., Apr. 17, 1941.

- ✓ no. 20, 260. *Hypochaeris glabra*
Note the various sizes

in plant body of this composite

- ✓ no. 20, 261. *Stylocline graphaloides* Nutt.

This tiny graphaloid in
tiny colonies $\frac{1}{2}$ to $\frac{3}{4}$ ft. across.

- ✓ no. 20, 262. *Lasthenia*
Abundant.

- ✓ no. 20, 263. *Cryptantha cleve-*
landii Greene var. *florosa* Jtn.

- ✓ no. 20, 264. *Orthocarpus purpur-*
ascens Bth. Corolla - sacs bright
yellow! against the crimson of
the spikes. See p. 416.

- "No. 20, 265. *Linanthus grandiflorus*
Cor. purple. See p. 416.
- "No. 20, 266. *Malacothrix californica*
These fine heads of
this composite are straw-
white or perhaps better pale
cream white. See p. 418.
- "No. 20, 267. *Plantago*
Common.
- "No. 20, 268. *Meconella linearis* (Benth.) Nels. & Macbr.
Platystigma
Petals white, 6,
the 3 alternate with yellow
upper half.
- "No. 20, 269. *Microseris leucocarpa*
- "No. 20, 270. *Collinsia*
See p. 417.
- "No. 20, 271. *Delphinium parryi* Gr.
ssp. *Blochmannae* (Greene) Lewis & Epling
- "No. 20, 272. *Linanthus dichotomus* Greene Bth.

- "No. 20, 273. *Lilia achilleaeifolia* Benth.
See p. 417. Cor. purple, light.
- "No. 20, 274. *Linaria*
Cor. purple; lower
lip 3 large spreading lobes, the
lobes truncate, emarginate, a
high ^{or inflated} quadratish palate in center,
palate large, the lower part near
throat pubescent, cleft $\frac{1}{3}$.
- "No. 20, 275. *Phacelia*
Corolla laeviuscula
- purple. See p. 415.
- "No. 20, 276. *Oenothera*
Corolla yellow,
fading brick-red.
- From Los Alamos Valley I drive
past Los Alamos, and on to
San Marcos ranch on the Santa
Ynez River, thence up grade to
San Marcos Pass, over Santa Inez
Mts.

410 Santa Inez Mts., near
San Marcos Pass, Apr. 17, 1941

No. 20, 277. *Salvia mellifera*
Greene.

No. 20, 278.

See p. 414. Clear yellow
rays. Rocky mountain slope.

No. 20, 279. *Leptodactylon*
californicum H. & A. Cor. pink. ^{See} p. 414

No. 20, 280. *Cryptantha micro-*
meres (Gray) Greene.

— Drove on to Santa Barbara
and put up at Hotel Real, a
poor hotel. I did not notice,
until too late, the railway
tracks were at the back of it.
Next morning I went on to
Ventura, thence to Conejo
Pass where I collected the
following:

Conejo Pass, Ventura Co. 411
Apr. 18, 1941.

No. 20, 281. *Mirabilis*
Corolla crimson,
the size, shape and pattern
of the lobation is quite like
that of the desert form. The
stamens and style much
exserted, declined on lower
side.

No. 20, 282. *Salvia mellifera*
Greene.
See p. 418.

— I go into Conejo Valley,
thence on a little divide into
Russell Valley. In Conejo Valley,
east side, there is *Quercus*
lobata!! More of it in Russell
Valley and all the way
down to Calabasas station,
edge of San Fernando Val-
ley!

Next I turn south through
Sepulveda Cañon in order to
avoid the central portion of

Los Angeles - But even so it is a most astonishing phenomenon four and six-lane boulevards, ^{exp} with a torrent of trucks, Reddys, delivery pickups, roadsters, coaches and vans pounding down them at the highest possible speed. Huge garages for autos, huge repair places for autos, huge salesrooms full of autos, innumerable vacant lots jam-packed with autos for sale; huge warehouses, great movie theaters; everywhere (even out in the remotest and poorest countryside) most amazing pleasure domes, palatial and costly beyond belief, called schools for the entertainment of the young and ostensibly for their education. Huge gangs of alien laborers tearing up the countryside

April 18, 1941.

for the making of new streets and the doubling of Los Angeles' population. An incredibly huge criss-cross network of main motor roads surrounding the entire mass of the city on all sides and hot with traffic. All in all, ^astrangely pulsing, rapidly throbbing, infallibly gigantic thing - this Babylon surging and tearing away - all that ancient Babylon ever was but implemented with modern devices and modern power.

Finally I pick up the cross-country Manchester Boulevard and follow it into Firestone ave. to Buena Park, thence to Rancho Santa Ana Botanic Garden which I reach in early afternoon.

- *Leptodactylon californicum* H. & A. (cont. 20, 279)
 Stigmas shorter than anthers, that is, lying below them in tube. Style very short, $\frac{1}{2}$ length of the 3 stigmas. Anthers on very short filaments, inserted about middle of corolla-tube. The whole tube is here called corolla-tube since indistinguishable into tube and throat. Or perhaps the point of insertion of filaments may limit tube, in which case tube and throat are about equal.

- *Eucelia*

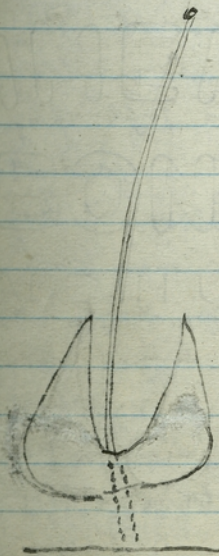
Cont. 20, 278. Rays 14, 19, 13. Dist. corollas blackish, the extruded anthers red-brown with yellow tips. Bracts of the receptacle embracing the flower, strongly keeled, broad, membranous, drawn down to

Apr. 18, 1941

A short apex, the apex thickened and short-hirsute. Ovary flattened ridge-margined, the margin long-hairy; one edge of ovary is embraced by the deeply-covering keeled bract. The ovary is obcompressed - parallel with radius of disk.

- *Phacelia distans* Benth. See p. 409.
 Cont. no. 20, 275

Stamens a little exserted!



- *Orthocarpus purpurascens* Bth.
Cont. no. 20, 264.

Filaments, all, hairy on one side.
Galea densely spreading-hairy
and purple. Corolla-sacs very
yellow, spreading-pubescent.

- *Pinus balfouriana* on Rancho Peak, acc. Woglum.
Pentstemon bicolor, Wilcox Cañon; acc. to Dr. R. S. Woglum.
- *Linanthus grandiflorus* Greene
Cont. from p. 408. No. 20, 265.

Tube and throat: tube short, the
stamens inserted at ^{very} summit of
it; throat short! a trifle longer
than tube. Filaments kneed a little
at insertion and hairy at this
point. Anthers exerted from
throat! yellow. Style long, ex-
serted from throat, longer than
stamens a little. (cf. very short
style of no. 20, 274, shorter than
stamens.) Calyx intervals mem-
branous to base!

April 18, 1941

- *Gilia*

Cont. no. 20, 273.

Corolla limb cut half-way to tube,
the included stamens inserted
exactly at sinuses. Anthers
indigo-blue. Throat about
equaling tube of corolla. Stigmas
nearly equaling corolla.

- *Collinsia heterophylla* Graham.

Cont. no. 20, 270.

Wings and keel purple on upper
half; wings few-pilose on upper
side nearer keel. Stamens and
style held closely in keel. Fifth
stamen a stout horn projecting into
tube. Throat on upper side thickly
set with downwardly slanting
long-hispid hairs. Lower lip
about equaling upper. Upper lip
white, lavender-tinted, pink-dotted
on "plate area." I notice no

difference between this and the plant^s,
say, Solano County.

Cont. no. 20, 266.

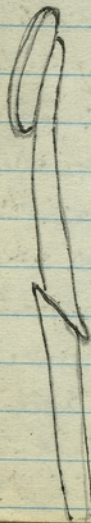
Pappus of fine soft long hairs

See p. 407. Cont. no. 20, 267.

Pappus bristles 4 or 3, or 2, possibly the 2s most common.

- *Salvia mellifera*

Cont. no. 20, 282.



The Council Meeting
at the Garden: I stop
over at the garden Friday
night (Apr. 18) and Sat.
night (Apr. 19). See a
note on the meeting,
p. 447.

From the council meetings at the Rancho
Santa Ana Botanic Garden (see p. 447) I
drive to Riverside, turn left towards the Citrus
Experiment Station and on a little hill
near it, I find Dr. Herbert John Webber,
his cottage one of a cluster of resi-
dences. Mrs. Webber died about a
year ago. In his interesting garden he
had put up an attractive metal
tablet ^{to her memory} on a boulder by a pool which
she constructed. His house has some
interesting paintings done by his daugh-
ter, Mrs. S.W. Shear of Berkeley. A fine
tree scene by Mrs. W.P. Kelly of Berkeley
- her husband is in "Boils" College
of Agriculture. In the evening we went
to dinner at the home of Dr. Milton and
Dr. Irma Webber, both former students
of mine. Dr. H. J. Webber says he fully
intends to live twenty years yet -
at least. I think he said he is now 76.
I stopped the night with him and
left the next morning for Oggett.
(cont. 61:27).

420

Bayon Cañon, Apr. 21, 1941
San Bernardino Co.

No. 20, 282 a. *Baeria*

Sandy flats. Devor sta.

No. 20, 283.

This gray composite
 is in tiny colonies on sandy flat.

No. 20, 284. *Senecio mohavensis* Gray.

Sandy flats,

amongst brush.

No. 20, 285. *Phacelia distans* Bth.

Cov. purple.

Victorville, Mohave Desert

6 mi. sw., c. 2800 ft. Apr. 21, 1941

No. 20, 286. *Gilia* ^{*malior* Day + Grant} ~~*serotina* Dougl.~~

Cov. purple or white.

Sandy mesa; sw. of Victorville.

No. 20, 287. *Pectorarya setosa* Gray.

No. 20, 288. *Coreopsis*

No. 20, 289. *Linanthus aureus*

Victorville, Mohave Desert

6 mi. sw.

Apr. 21, 1941.

421

c. 2800 ft.

No. 20, 290. *Baeria*

No. 20, 290 a. *Coreopsis*

No. 20, 291. *Amsinckia tessellata*

No. 20, 292. *Lomatium*

No. 20, 293. *Mimulus fremontii*
bigelovii Gray. Forming small crimson
 colonies on the open-brushy
 mesa.

- Victorville, lying in the shallow
 cañon of the Mohave River alongside
 the river, has become something
 of a frontier town - more of a
 town than this desert country
 can well support, it would seem.
 I drive on to Barstow, call in
 at Waterman Ranch. On inquir-
 ing for Miss Waterman I learn
 with a shock that she died
 day before yesterday, Saturday, in
 Berkeley.

- I drive on east to Daggett and turn in, off the highway, to the Van Dyke ranch, where I look up, at once, Miss Mary Beal, my botanical collector in the Mohave Desert. Sleeping quarters are found for me in the Van Dyke house. Dix Van Dyke is a "desert author," following the Van Dyke tradition, and writes for the Barstow newspaper descriptions of the desert.

The next morning, with Miss Beal, I drive east to the lava fields near Lavis. It is a beautiful clear cool day with only a slight wind stirring.

- No. 20, 294. *Penstemon oblongifolius* ^{Sandy flat,}
atua. hundreds of the low plants forming a scattered colony for a hundred yards. See p. 430.
- No. 20, 295. ^{*Cryptantha*} *Eremocarya micro-*
antha Greene.
- No. 20, 296. *Cryptantha angustifolia* Greene. Mostly very leafy.
- No. 20, 297. *Cryptantha pterocarya* Greene.

- *Phacelia campambaria*. Miss Beal says this is not merely a stainer of fingers by its herbage, but also a skin irritant.

424 Ludlow, Mohavz Desert,
April 22, 1941. 1790 ft.

- ✓ No. 20, 298. *Monoptilon*
 Sandy brushy mesa.
 ✓ No. 20, 299. *Rafinesquia neomex-*
icana Gray. Ligules clear white,
 the backs of the outer with
 3 parallel lavender bands.
 Accessory bracts at base of
 involucre not "subulate" but
 lanceolate - acuminate or one
 might say broadly subulate.

Cont. from middle p. 343. Bally
 Butte is now Shasta Bally, 6246
 feet.

Amboy Crater, April 22, 41. 425
Mohavz Desert. 1700 ft.

- ✓ No. 20, 300. *Eschscholtzia minuti-*
flora. Sandy flats.
 ✓ No. 20, 301. *Mentzelia*
 golden corolla. Leaves
 ovate, subovate at base, ^{or} rounded
 at tip, entire on upper part of stem
 or with one or two teeth on each
 side. Lower leaves irregularly
 and unequally pinnatifid. Sandy
 flats.
 ✓ No. 20, 302. *Plantago*
 ✓ No. 20, 303. *Cryptantha angustifolia*
 (Torr.) Greene.
 ✓ No. 20, 304. *Cryptantha maritima*
 var. *pilosa* Jtn.
 ✓ No. 20, 305. *Chorizanthe*
 ✓ No. 20, 306. *Eriogonum thomasi*
 Torr.

✓ No. 20, 307. *Perityle emoryi* Torr.
 See p. 430.

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Amboy Crater, Mohave Des.

No. 20, 308. *Phacelia pedicellata* Gray.

Herbage glandular - long-

hairy both surfaces of leaves
very sticky-glandular and ^{usually}
pleasant in its strong odorous

On lava talus of crater. See p. 431.

No. 20, 309. *Linanthus jonesii* (Gray)
greene. Sandy flats. See p. 429.No. 20, 310. *Pectocarya linearis* Dc.

Sandy flat.

No. 20, 311. *Pectocarya heterocarpha*
Jtn.No. 20, 312. *Cryptantha nevaden-*
sis Nels. & Ker. Sandy flat.No. 20, 313. *Sisymbrium*This crucifer was not-
iced in only a single individ-
ual: its glabrous bright-green
entire leaves. Sandy flat.
↑ mostlyNo. 20, 314. *Nemacladus* ^{rufescens Greene}
^{var. tenuis}
See p. 428.San Bernardino Co.
ert, Apr. 22, 1941. 1700 ft.

427

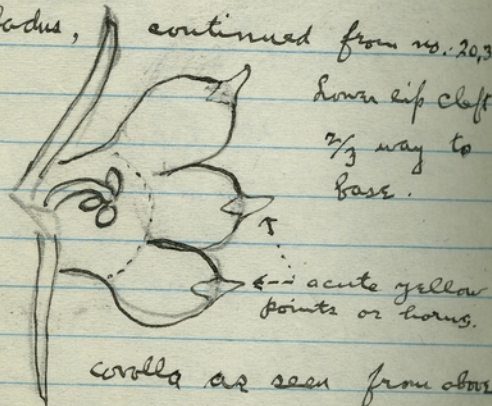
No. 20, 315. *Encelia frutescens* Gray.
See p. 430. Gravelly wash. shrub 1 3/4 ft.No. 20, 316. *Blaenactis*
Sandy flat.No. 20, 317. *Mentzelia*
This is, doubtless,just the same as 20, 301, but
seemed somewhat different in
the field on account of its
smaller corollas.

No. 20, 318.

Rays lavender.

No. 20, 319. *Langloisia punctata*
Gooding Very few
of the Lilac Sunbonnets were
seen.No. 20, 320. *Palafaxia*
Gravelly wash.No. 20, 321. *Nana pusillum* Lem-
mon.No. 20, 321a. *Achyrocline cooperi*
T. + G.

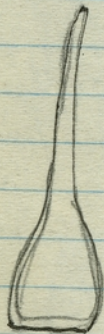
Nemacladus, continued from no. 20,314.



lower lip cleft
 $\frac{2}{3}$ way to
base.

acute yellow
points or horns.

corolla as seen from above



one of upper petals
the

Two upper petals
cleft close to the
perigonous calyx
tube - (summit of
calyx-tube), that
is distinct from
each other and
from the lower
lip.

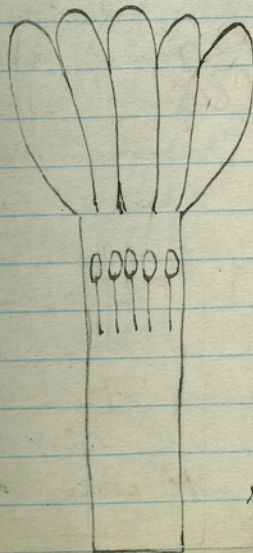
Cor. white; but
upper lip purple.



gland process. no. 20,314.

Liranthus

Cont. 20,309.



Cor. cream-
color or straw
yellow.

calyx-teeth
short, $\frac{1}{5}$ as
long as tube,

short-cuspidate, the
intervals narrow,
scarious to base,
the thick green mid-
ribs sprinkled with
black-shaped glands.

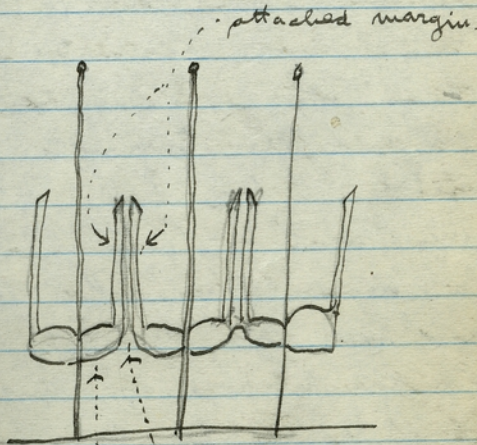
- *Pentstemon albomarginatus* - Cont. 20, 294.-
 Cor. lobes subequal, but
 the upper lip shorter than the
 lower; the middle lobe of
 lower lip a little narrower
 than the lateral; palate of
 lower lip thinly hairy. Anthers
 black. All filaments and style
 glabrous.

- *Eucelia frutescens* Gray. (Cont. no. 20, 315.) Achene
 strongly fattened, ^{long-} siliate, one side
 embraced by a strongly keeled
 bract. Pappus arms 2, one at
 each angle densely villous,
 or only 1 and likewise densely
 villous. Backs of the lobes with
 gland-tipped hair. Receptacle flat.

- *Perityle emoryi* (Cont. 20, 307.) Rays short,
 oblong, 12, 9, 12, 11. Cor. tubes,
 disk and ray, glandular-hairy.
 Achenes strongly obcompressed,

glabrous save for a slight pubescence
 on margin.

Phacelia pedicellate, cont. no. 20, 308.



↑ pairs of scales
 scales prominent along
 occur this edge clear
 below, or to top and purple
 protracted lined on margin.
 below. scale at apex
 acute with
 free point.

Cor. lavender or blue with whitish
 "eye" (throat).

John Burroughs at one time used to come to California for the winters and stop at the Mission Inn in Riverside. Using the public library, he became acquainted with Mary Beal who was ^{an} assistant librarian. Mr. and Mrs. Burroughs were introduced to Miss Beal and when they went to Pasadena to live for a season they asked her to come and visit with them for a week. For the purpose the Riverside Library gave her leave of absence. Later, Miss Beal became prostrated with tuberculosis and it was necessary to put her in a different climate. So at the instance of someone she wrote to John Muir, whose daughter Helen had been sent to the Van Dyke ranch at Daggett on account of tuberculosis. Muir referred her to his

April 23, 1941.

daughter, and by the assistance of friends Miss Beal was established in a tent at Van Dyke ranch. The next time, after this, that John Burroughs came to California, he was met in Arizona by John Muir who showed him the Painted Desert; after which they came on into California together, both stopping over for a day in Daggett - Muir to see his daughter Helen, Burroughs to call on Miss Beal.

Muir got in touch with the Van Dyke ranch in the beginning through a friend named Louis in Pasadena who knew Theodore Van Dyke. Theodore Van Dyke is a brother of John Van Dyke, author of "The Desert". They are cousins of Henry Van Dyke of Princeton. Theodore Van Dyke as a ranch

man wore rough clothing, but he was a handsome man and carried in his walk an air of distinction. Miss A. L. Waterman used to say that when you saw him on the street in Barstow, wearing the most ragged sweater, you knew that there was a man of quality - a man separated completely from the ordinary, within that sweater.

When Helen Muir was brought to the desert, her father built for her a little cabin in which to live. She took her meals in the Van Dyke house, but soon changed to the Frank house, hard by, where lived Mr. and Mrs. Frank, because the cooking of Mrs. Frank was so much better. Helen in two years got well. The Franks had a son, Buel Frank, who married Helen. John Muir said: "My daughter,

Helen Muir, has changed her name to Helen Frank. What a name! However, he seems a fine youth and so I guess it is all right." (See p. 490).

Theodore Van Dyke's son, Dix Van Dyke, now runs the Van Dyke ^{ranch}. He has a fine large robust frame, good features and a fine shock of hair. Few men, if any, know the Mohave Desert, better than he.

Meanwhile Miss Beal recovered - but she has still to live on the desert. She is quite rugged and strong now and has devoted herself to the desert flora with marked success. She knows well nearly every plant in her desert that has anything of popular interest. Her naturalistic knowledge is very great. Cont. p. 498.

Drove from Doggett to Bonanza,
thence over "First Summit" to Calico
Wash, over Calico Mts., on Carr
Springs road, to Paradise Valley
and to a point near Garlic Spring
and Bicycle Lake.

✓ No. 20,322. *Chaenactis*

Leaves pinnately
divided, with remote lobes, the
rachis and lobes fleshy and
subterete. Cor. white. Calico Wash.

✓ No. 20,323. *Layia*

Cor. of disk yellow.

Rays white. Calico Wash.

✓ No. 20,324. *Gilia davyi* Mtn.

Cor.: With very short tube (no
longer than calyx) and widely
expanded throat; throat nearly
twice as long as tube. Stamens
inserted just in or below sinuses.
Cor. blue. Calico Wash.

Paradise Mts., 4 to 5 mi. nr. of
cent. Mohave Desert, on a point of rocks.
c. 3500 ft.

✓ No. 20,325. *Microseris* ^(Lindley)

✓ No. 20,326. *Cryptantha pterocarya*
Greene.

✓ No. 20,327. *Gilia* ^{seclata Heller} ~~tenniflora~~ Bth. var.
simata (Pursh). Cor. lavender-purple. Cor-
lobes acute. Calyx with gland-tipped
hairs. Intervals of calyx scarious
to base. Cor. tube no longer than
calyx, - rather shorter! Throat about
equalling tube. Intergrade to var.
latiflora Gray?

✓ No. 20,328. *Gilia* ^{capa (Jones Heller sp. spec. formis A. & V. Grant)} ~~tenniflora~~ Bth. var.
longituba Jepson. Cor. lavender-purple,
throat dark-purple and white;
tube extremely long. Calyx as to
structure exactly as in 20,327 and
20,324.

✓ No. 20,329. *Pterocarya heterocarpha*
Jtn.

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Paradise Mts., 4 to 5 mi. nr. on
Point of rocks, cent. Mohave Desert
c. 3500 ft. Apr. 24, 1941.

- No. 20, 330. *Amsinckia intermedia* F. & M.
No. 20, 331. *Cryptantha barbigena* W.
(Gray) Greene.
No. 20, 332.

This inuloid plant
grows in sandy crevices of a rock-pile.

- No. 20, 333. *Monolopia*

Rays 7, 7. Pappus none.
Achenes microscopically hispidulose.
Disk corollas golden-yellow; rays lemon-
yellow.

- No. 20, 334. *Nicotiana trigonophylla*
Dunal. Stems several, from the
erect,
distinctly woody crown of a tap-root.
Cor. greenish-yellow, constricted just
beneath lobes. Cont. p. 447.

- No. 20, 335. *Amsinckia intermedia*
F. & M.

- No. 20, 336 *Cryptantha decipiens*
Hel.

439

Garlic Spring (4 to 5 mi. sw. of),
near Bigfoot Mt., Mohave Desert, Apr. 24, 1941.
c. 3500 ft.

- No. 20, 337. *Nicotletia*

Rays 9, 8, 8, 8.

Rays, brown-purple, Stems coarse,
or black-purple.
stocky. (pink; disk) Receptacle naked,
flattish. Pappus of numerous
bristles, the bristles microscopically
obscurely barbellulate or roughish.
Plants standing in holes!

- No. 20, 338. *Gilia tenuiflora* Bth. var.
^{Can. Jones ssp. *Speciosa* (Teps.)}
^{2nd. p. 441.}
~~*longituba* Jepson~~ Cov. lavender-purple,
the tube long; essentially like 20, 328.

- No. 20, 339. *Microseris Lindleyi*

Herbage puberulent,
the peduncles subglabrous.

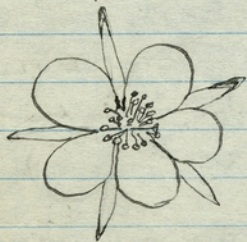
- No. 20, 340. *Mentzelia*

Petals ^{ovate}, rounded
at apex, perhaps obscurely apiculate
sometimes. Stamens 26, all alike.
Stamens 40, by another count. I
now observe more correctly: petals
all distinctly apiculate, the apicu-
lation small, bearing about

April 24, 1941.

c. 3600 ft.

3 long hairs at tip. The outstanding and most distinctive feature of the flower may be this: that



is, the lanceolate narrow

calyx-lobes standing stiffly out all

around beyond the corolla.

Petals lemon-yellow, 2 to 2½ lines long. Calyx-lobes rigid and green.

✓ No. 20,341. *Mentzelia*.

Petals golden-yellow, obovate, rounded or truncatis.

Calyx-lobes pinkish, submembranaceous in age. Stamens probably about 100, all the filaments slightly dilated at base. Corolla 6 to 7 lines long. Calyx-lobes about ½ or less than half as long as the petals. Stems very slender! flexuous. A

handsome plant, all the more effective because of the contrast between the gold of the corolla and the vivid-green of the leaves and ovary.

✓ No. 20,342. *Mentzelia*

This ought to be the same as no. 20,340, but the calyx-lobes are short.

✓ No. 20,343. *Gilia cana* Jones ssp.

speciosa (Teps.) A. & V. Grant Essentially like ✓
20,338.

Corolla lavender-purple, the stamens scarcely exserted from throat, the short filaments inserted at sinuses. Stamens equal and equally inserted, the filaments adnate below insertion in relief to base of throat.

— Cont. from p. 439. No. 20,338. =
Gilia tenuiflora var. *speciosa* Jepson.
† Bth.

Low lava hill sw. of Bicycle Lake
near Tiefort Mtn., Central Mohave
Desert. c. 3000 ft.

"No. 20, 344. *Ellisia micrantha*
Encrypta micrantha ^{Hel.} Corolla white, its lobes
elliptic, nearly $\frac{1}{2}$ as long as tube.
Stamens 5, inserted on base of cor-
olla tube.

"No. 20, 345. *Nemacladus*

Lower lip: lobes oblong-
acute, ciliate, the lateral a little
obliquely oblong, all with a brown
umber spot at apex. Upper lip:
lobes oblong-acute but narrower a
bit than lobes of lower lip.

Glandular processes with 2 deflexed
transparent rods. Corolla white,
all the lobes much alike save as
indicated in detail. Two upper lobes
concurrent at tip and arched in
front of stamen-column!!

April 24, 1941

"No. 20, 346. *Linanthus demissus*
Abundant in the finely broken
lava rocks. Cor. white, campanulate,
the stamens inserted near base of
tube, squaring throat or slightly ex-
ceeding it. Filaments with a broad
base, a glandular area behind each. ^{Thick or}
Calyx cut deeply into lanceolate
lobes, the lobes scarious-margin-
ed, distinctly united at base but
very narrowly. Corolla-throat
crimson-spotted, its lobes elliptic,
in age with the sides so curved
as to resemble the fans of a
turbine windmill.

"No. 20, 347. *Linanthus gonzalezii*
(Gray) Greene. Corolla buckskin-color.
Stamens inserted in upper part of
tube, the filaments filiform, the
anthers lying in throat.

Low lava hill sw. of Bicycle Lake,
near Tiefort Mtn., Mohave Desert,
c. 3000 ft. Apr. 24, 1941.

- "No. 20, 348. *Nema pusillum* Lemmon.
Corolla lavender. See p. 446.
- "No. 20, 349. *Cryptantha angustifolia*
Greene.
- "No. 20, 350. *Cryptantha saxorum*
Tepson, sp. n. Note the lanceolate
bracts beneath each flower. Note
the lanceolate leaves.
- "No. 20, 351. *Erodium texanum* Gray.
- "No. 20, 352. *Oenothera alyssoides*

Paradise Spring, Paradise Mts.
(within about 3 mi.)
Mohave Desert, Apr. 24, 1941.

- "No. 20, 353. *Linanthus dichotomus*
(Bth.) It sundown the mesas
burst into Evening Snow - the
white flowers shining thickly over
the mesa. Miss Beal says the
corollas open 2 or 3 times before
closing permanently. Cont. p. 445.

Low lava hill sw. of Bicycle Lake,
near Tiefort Mtn., Mohave Desert
c. 3000 ft. Apr. 24, 1941.

- No. 20, 354. *Malacothrix californica*
var. *globata* Eat. Called
"dandelion" by Miss Beal. Heads
2 inches broad. Pappus: all ovaries
with a circle of bristles, the outer and
the inner, - the outer pappus with
2 persistent bristles, the inner with
1 or 2. Pappus bristles minutely
barbellulate. "intervening minute
^{tooth} bristles" is scarcely worth while noting.
The phraseology in Man. 1002 is defective,
since it is implied our pappus con-
sists of only 2 persistent bristles.
Cont. p. 447.

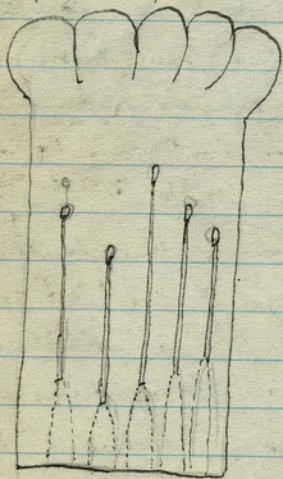
- *Linanthus dichotomus* cont. 20, 353.
Dilations at base of filament ob-
ovate, lying, in relief on tube just
above base, that is attached
to middle of back. Anthers very
long and slender, included in
throat.

✓ No. 20,355. *Chaenactis*

Outer pappus: 2 lanceolate paleae; 2 oblong paleae which are shorter. Inner pappus: 5 lanceolate-acuminate paleae. Radiate corollas: one lanceolate-acuminate palea, 3 short broad paleae.

- *Nema pusillum* Lem.

Cont. no. 20,348.



Stamens unequal, and unequally inserted on lower part of tube, the filaments continued below insertion as an adnate dilation with free edges, slightly

- *Nemacladus*, cont. no.
- *Nicotiana* (Cont. 20,334). Stamens inserted at summit of short tube (or it were better to say at base of throat), included, the anthers in mouth of throat. No! it were best to say stamens inserted at summit of tube.

? see p. 453

- *Malacothrix californica* var. *glabrata*, cont. from 20,354. Leaves in basal tuft, the corolla negligible. Stems branched and sexual-flowered, sometimes simple and 1-flowered.

Cont. from p. 418. Council Meeting, Rancho Santa Ana Botanic Garden, Apr. 19, 1941. Met in the dining room in main building.
Present: Allan Chickering, ^{Stuart J. Madril} Alice Eastwood, Leroy Abrams, Woglum, Theo. Payne, ^{Stamens} (of Anaheim, an historian-local history), Walker (attorney), H. J. Webber, Milton Webber, myself - and members of the garden staff: Mrs. E. V. Bryant, Dr. C. B. Wolfe, Engr. Ewrett, Engineer Johnson. Subjects for discussion were introduced only by Mrs. Bryant. No motion was made or new subject introduced by any Councilman.
- Cont. p. 499.

No. 20,356. *Mimulus mohavensis*
Common. This strange plant is
found on gravelly slopes that are a
little moister than ordinary in the
desert, in little colonies. It is the
most remarkable of Californian
Mimulus - the most distinctive,
the strangest; it is almost wild, it
is so far off the *Mimulus* type genuine.

No. 20,357. *Mentzelia*

No. 20,358. *Plantago*

Barstow, hills s. 3 mi.

No. 20,359. *Cryptantha nevadensis* Nels.
+ Ken.

No. 20,360. *Molacothrix coulteri*

No. 20,361. *Cryptantha nevadensis*
Nels. & Ken. Stem slender, weak,
more or less flexuous, growing under
and supported by bushes.

No. 20,362. *Cryptantha pterocarya*
(Torr.) Greene.

No. 20,363. *Linanthus brevicularis*

Greene. Filling a wash 3 mi. s.
of Barstow on road to Stoddard's
Well. It makes broad bands of
pink in the wash. Growing so
thickly, it gives the impression
of being a larger-flowered species.
Perhaps a quarter-mile of it; may
be more, up the wash, since we turned
back at this point. Stamens equal and
equally inserted in middle of throat.
Throat short and rather small. Stig-
mas very long: 9 mm. long. Calyx
a little spindle-shaped, the scarious
intervals running nearly or essentially
to base, the green ribs thickened up-
wards and somewhat oblanceolate! ^(widened)
the teeth cuspidate, nearly $\frac{1}{2}$ as long
as calyx-tube.

No. 20,364. *Oenothera*

In wash. Cor. white.

Dr. C. D. Wolf, of Rancho Santa Ana Botanic Garden, arrives at Van Dyke ranch at 8:30 and after repacking and loading up, we leave Dogget, bound for Old Dad Mountain.

No. 20,365. *Argemone* ^{= *A. corymbosa* Greene} *intermedia*

See vol. 61, p. 9. Pisgah sta. This colony is one of only 3 known colonies in the state says Dr. Wolf.

No. 20,366. *Phacelia pachyphylla*

Gray. Plants in valley between Bristol Mts. and ^{Marble Mts. and} Old Dad Mts.

No. 20,367. *Eriogonum thomasi* Torr.

No. 20,368. *Linanthus aureus* (Nutt.) var. *decorus* (Gray). Corolla tubular-campanulate, white; tube very short; lobes bowl-shaped in position. This is not in the least salmoniform. Abundant on flat.

No. 20,369. *Malacothrix californica* var. *glabrata* Lat.

No. 20,370.

This woolly composite is prostrate in the little "opens" on the sandy flats, "opens" amongst the ^{Tasmanian} bushes of the mesa.

No. 20,371.

Doubtless the same as 20,370, but it looks different in the field.

No. 20,372. *Chaenactis*

No. 20,373.

— We turned off the highway between ^(614 ft.) Aubrey and ^{rays yellow.} a few miles east of Aubrey, to the left, on an "improved" or "worked" desert road running north. The "road" soon runs out but we go on, on a good desert wagon trail and begin to ascend a sloping plain, a slightly tilted mesa. The dominant bush is *Larrea tridentata* var. *glutinoso*. Each bush shelters a large stunning bouquet of flowers consisting of the splendid lemon-yellow flowers of *Malacothrix californica*.

var. *glabrata* Eat. (no. 20,369), *Phacelia* no. 20,372, *Phacelia* no. 20,366, with the tiny composites making gold needles scattered over the white range. (no. 20,370 and no. 20,371 and no. 20,373). The flats are filled with wide stretches of the white *Linsaine* no. 20,368 which often forms dense colonies. It is a glorious scene - these gorgeous bouquets spaced rather regularly ^(every few yards) for miles over the plain, the mesa so (cont. p. 453).

We go on and stop again ^(itinerary cont. p. 462) near a red rocky spur, steep and made up of heavy blocks, where are on the sides are the following:

"No. 20,374. *Stylocline micropoides* Gray

This imbricoid between the rocks on a talus slope.

"No. 20,375. *Sphaeralcea*

Bush 2 1/4 ft. h., woody-branched below, the woody stems 8 to 12 inches long. Dr. Wolf speaks of

this as the "large-flowered" *ambigua* acc. to Kearney, the var. *beckii* of Mung. Rocky wall.

"No. 20,376. *Glysomocarpus laciniatus* Nutt. with 20,375

"No. 20,377. *Delphinium parishii* Gray
Abundant on talus slope.

"No. 20,378. *Galium*
Bush about 1 1/2 to 1 3/4 ft. high. In rock crevices on rocky wall. Stems woody below.

"No. 20,379. *Ausinkia tessellata* Gray
Locally common; talus slope.

"No. 20,380.
This imbricoid in fine slides on talus slope.

"No. 20,381. *Pectocarya recurvata* Tt.

- *Malacothrix*. Cont. p. 10, vol. 61.

Cont. from p. 452 at middle, slightly off level so to look nearly level in most directions.

And all about, rising abruptly off the table are the desert ranges: Bristol Mountains westerly, Marble Mts. easterly and Old Dad Mountains northerly.

Valley between Bristol Mts. and
Old Dad Mts., night camp,
3 miles from Staples Cove,
Mohave Desert, Apr. 28, 1941.

No. 20, 382. *Ephedra californica* ^{2500 ft.}

Wats. ♂. 10 ft. h., trunk 1 ft. diam! ^{at 8 inches}

No. 20, 383. *Cryptantha decipiens* Hal.
Shade of *Chilopsis*.

No. 20, 384. *Phacelia distans* Bth.
In protection of bushes.

No. 20, 385. *Ephedra californica* Wats.
♀ of no. 20, 382.

No. 20, 386. *Lepidium fremontii*
Bush 3 ft. h. Very
floriferous over the mesa now.

No. 20, 387. *Isoneria arborea* Nutt.
var. This narrow-
poded form is abundant over the
desert, especially in washes and
is now wonderfully floriferous.

No. 20, 388. *Synbrium* ^{= *Descurainia*}

No. 20, 389. *Rafinesquina neo-mexica*
na Rays pure white, a
brilliant white. This grows almost

Valley between Bristol Mts. and Old Dad
Mts., night camp, 3 mi. from Staples
Cove, Apr. 28, 1941. 2500 ft.

entirely in the protection of bushes
and its white heads glorify in that
way many a shrub by extending
up through its tangle of branches.
It is difficult to extricate an entire
plant from a thorny bush.

No. 20, 390. *Frauseria dumosa*
- *Asier mohavensis*.
- *Chilopsis saligna*.

No. 20, 391. *Prunus fasciculatus*
Rounded shrub 6 ft. h.,

angularly branched.
= *Caplanthus*
No. 20, 392. *Thelypodium cooperi*
(Wats.) Payson.
Few flexuous branches

ascending through the tangle of
bushes and climbing by means of
its curved capsules hooked over
the branches.

- *Coleogyne ramossissima*
33 in. h., 5 ft. broad.

- Dr. C. B. Wolf, my companion here in
the desert, had his undergraduate
work with ^{F. J.} 5 miles at Occidental
Natural History
College. His interest in botany related
to our native plants (Cont. p. 497).

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Lower end of Cove at Willow
3500 ft."No. 20,393. *Cryptantha dumetorum*
Greene. Rocky wall borders"No. 20,394. *Cryptantha decipiens* Hel."No. 20,395. *Gilia latiflora* Gray.
<sup>australis (Mason + A. Grant)
V. Grant</sup>Cor. lavender; leaves
bipinnatifid; shade of rocky walls.No. 20,396. *Pterostegia drymarioi-*
des shade of
rocky wall."No. 20,397. *Cryptantha barbigera*
Greene. along rocky wall."No. 20,398. *Euphorbia*
with 20,397."No. 20,399. *Microseris lindleyi*
with 20,397."No. 20,400.
Rays pale cream;
on mesa, around bushes."No. 20,401. *Pentstemon* ^{pseudopentstemon}
Greene.Bdg. See p. 498. at foot of cliffs
and in crevices on rocky wall.
stamens, fertile and sterile, andsprings, Old Dad Mts., Apr 28, 1941.
Mohave Desert.

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style all glabrous; or the stamens
towards base with a few short scat-
tered minute gland-tipped hairs."No. 20,402. *Emmenanthe penduli-*
flora Bth. mesa"No. 20,403. *Astragalus didymocarpus*
var. ~~dispermus~~
Only a single individ-
ual of this legume noted."No. 20,404. *Cryptantha pterocarya*
(Torr.) Greene."No. 20,405. *Gilia sinuata* Dougl. or
reduced *G. latiflora* Gray. On mesa, around
bushes."No. 20,406. ^{= *Cryptantha*} *Eremocarya micr-*
antha Greene. mesa."No. 20,407. *Mantzelia*
In bushes on mesa,
stems very slender, tangled in
other herbage."No. 20,408. *Lycium andersonii*
Gray."No. 20,409. *Bromus trinitii* Desv.
This grass on mesa.

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Lower end of Cañon at Willow Springs
Cañon, Old Dad Mtn., Mohave
Desert, Apr. 28, 1941
E. 3500 ft.

- ✓ no. 20,410. *Lotus rigidus*
(Benth.) Greene In rock pile.
✓ no. 20,411. *Zygadenus*

Lower end of Cañon at Willow Springs Cañon,
Old Dad Mtn.

- ✓ no. 20,412. *Macroseris Lindleyi*

- ✓ no. 20,413. *Arabis*

- ✓ no. 20,414. *Haplopappus linearis-*
~~*linearis*~~ *folius*
var. *interior* (Cov.) Jones

- ✓ no. 20,415. *Linanthus nigellus*
(Gray) Greene. Cor. white!

- ✓ no. 20,416. *Ephedra nevadensis*
on hillsides. ♀

- ✓ no. 20,417. *Ephedra nevadensis*
on hillsides. ♂

- ✓ no. 20,418. *Phacelia campanularia*
Willow Springs Cañon. Perfectly prodigious cor-
ollas, larger than ever seen before.
Splendid colonies, small but very
showy, thickly scattered amongst
the rocks on the northerly wall
of the cañon. A stunning spectacle!

Willow Springs Cañon, Old Dad
Mountains, Apr. 29, 1941.
E. 4000 ft.

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- ✓ no. 20,419. *Gilia stellata* ~~Heister~~
Schreb. Cor. white.

- ✓ no. 20,420. *Oenothera*
Corolla white.

- ✓ no. 20,421. *Eucelia actoni*
Bushy composite 2-3 ft. h.

- ✓ no. 20,422. *Salvia columbaria* Bth.
Abundant around creosote bushes
and frequent up the cañon.

- ✓ no. 20,423. *Gilia* ^{*australis* (Mason & A. Grant) V. Grant} ~~*latifolia* Gray~~
Leaves in a basal rosette.

- bipinnately compound. Cor. pink.
Edge of boulders, in the sand. Cove
in lower part Willow Cañon.

- ✓ no. 20,424. *Nicotiana trigonophylla*
Dunal. In rocks; with
no. 20,423.

- ✓ no. 20,425. *Cirsium*
Plants 6-7 ft. tall,
particularly few-branched above,
the heads white, on long peduncles.
With no. 20,423.

- no. 20,426. ~~*Helianthus*~~ *Haplopappus linearis*
var. interior (Cov.) Bushes spotting the
cañon sides, south wall, with
splashes of yellow.

- no. 20,427. *Melica imperfecta* Trin.

This grass grew in
partial shade of boulders.

- no. 20,428. *Aster abatus* Blake

Rays lavender.

- no. 20,429. *Barbarea fremontii*
Stems several, erect, 6 to 7 ft. h.

Shelter of rock, only one bush
seen. 5700 ft. On crest lateral ridge.

- no. 20,430. *Menodora spinescens*
Gray. Corolla 4 or 5-
lobed, the lobes crenulate a little on
toothed, mostly 2-lobed at apex.

Plants $1\frac{1}{4}$ ft. high, 5 to 7 feet broad,
forming a dense plant. 5500 ft.

- no. 20,430 a. *Purshia glandulosa*
Curran.

Near station for
no. 20,429.
5500 ft.

- no. 20,431. *Poa scabrella* (Thurb.) Benth. ex Vasey
This grass in a tiny
meadowlet along the cañon streamlet
at about 5000 feet.

- no. 20,432. *Gilia stellata* Heller
latiflora Gray. Inter-
grade to *G. sinuata* Benth. Corolla white.

- no. 20,433. *Microseris lindleyi*

This narrow-headed can-
nibal, yellow-flowered, grows in the
meadowlet noted under no. 20,431.

- no. 20,434. *Pterigiobothrys arizonicus*
Greene. Meadowlet noted under
no. 20,431.

- no. 20,435. *Minimus rubellus* Gray.
Corolla yellow, its

lobes subequal, but the limb obviously
bilabiate; each lobe sharply and
deeply lobed. Meadowlet, see no. 20,431

- no. 20,436. *Gilia viscaria* Jepson.
Corolla lavender. Calyx

inflated, the intervals membranous with
a tuft in them.

- no. 20,436 a. *Claytonia perfoliata* Donn ex Willd.
with 20,431.

— Itinerary continued from middle p. 452. From the "red rocky spur" we ran on northwesterly until close to the main mass of the Old Dad Mts. lying on the sloping mesa. As we get quite close we turn off the road left on to a wagon trail leading up into a cove or flat gutting into the mountain between short spurs. I see a house - a small one and as we come up to it we notice a woman, about forty or so, very dark and ill-favored, a group of four children, all girls, that swarm out to us. Their racial identity is not at once obvious - since they do not look like any of the Californian native tribes I know. The two younger children are so dark as to look negroid; the oldest girl, about 13, speaks English well enough. Soon we find the father

who comes from a little ways above in a truck pick-up. He speaks English a bit and we learn there is a white man further up. This man ^{of the truck} looks Mexican. The cabin occupied by his family is comfortable, for this ^{wild} region, and sound. He goes with us 300 yards or so around a corner and then shows up a nice little vale, "the cove", and we see a beautifully constructed concrete and stone cabin with porches and painted roof and find ^(named Staples) a man ^{who} gives up much geographic information about the Old Dad Mts. He says the altitude of his place is 5000 feet. He tells us of a wagon trail 3 mi. back and we go back to it, turn off westerly, camp one night in a wash, and, next morning, soon turn right at a fork in wagon trail and climb up into a higher mesa ^{very} near mouth of Willow Springs Cañon. In this case and up into cañon to 5200 ft. or so we botanize. pp. 456-465.

- ✓ no. 20,437. *Arabis*
Rocky slope, rare.
no. 20,438. *Claytonia perfoliata* Donn
~~Albion~~ ^{ex Willd.}
With no. 20,431,
near the large piñon tree in cañon
bottom.
✓ no. 20,439.

This fern grew under
rocks.

- ✓ no. 20,440. *Nemophila* ^(menziesii H. & A. var.) *integrifolia*
(Barish). Corolla blue.
✓ no. 20,441. *Phacelia cryptantha*
Greene. Cor. pale white; rocky
slope.
✓ no. 20,442.

This fern under rocks

- ✓ no. 20,443. *Bromus trinii* Desv.

This grass in cañon
bottom.

- ✓ no. 20,444. *Ellisia micrantha* Hel.
Eumyrtia micrantha ^{Hel.} Corolla purple, yellow-
ish eye.

- ✓ no. 20,445. *Phacelia lemmingii* Gray.
✓ no. 20,446. *Sisymbrium*
✓ no. 20,447. *Gilia* ^{stellata Heller} *latiflora* Gray.
? Intermediate to *G. sinuata*, Cor. white.
Rocky slope. ^{rough.}
✓ no. 20,448. *Castilleja*

Rocky slope.

- ✓ no. 20,449. *Emmenanthe penduliflora*
^{Bth.}
✓ no. 20,450. *Pectocarya* ^{Rocky slope.} *setosa* Gray.
no. 20,451-20,499. Omitted
Malacothrix clevelandii
no. 20,500. Composite, in dense growth
of many plants under bushes. c. 4100 ft.
✓ no. 20,501. *Ratibegia californica*
Erect, tall; rays white.

— *Salazaria mexicana*

(on foot, of course),

— We climb high in Willow Springs
Cañon, to about 5700 feet (see pp. 460,
461, 464, 465). On the way down
I leave Dr. Wolf and work
(cont. p. 484)

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Valley near Willow Spgs. Cañon,
mesa Mohave Desert
San Bernardino Co. Cal.No. 20,501a. *Lycium* ~~andersonii~~
Cooperi Gray.No. 20,502. *Eriogonum viridescens*No. 20,503. *Gilia* ~~dermissa~~ Gray.*Limnanthus dermissus* Greene.No. 20,504. *Astragalus didymocarpus*
var. *didymocarpus*
This annual as
Astragalus is infrequent.No. 20,505. *Eriophyllum lanosum* Gray.No. 20,505a. *Montezuma*Tangled with bushes,
stems slender, weak.No. 20,506. *Phacelia fremontii* Torr.No. 20,507. *Sisymbrium*No. 20,508. *Astragalus layneae*
Prostrate Greene.No. 20,509. *Nemacladus*
Cor. white, its 5 lobes sub-
equal, the two upper spreading
abruptly right and left horizon-

Old Dad Mts., Apr. 30, 1941.

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tally, leaving a blank interval on
upper side of corolla. Corolla-
lobes obscurely yellow-tipped and
a yellow nure, the nure obscure.No. 20,510. *Nemacladus*Filaments on lower side of
flower spread below, separated by,
3 very large glands; their processes
very short, each having 2 transpa-
rent rods. Lower lobes corolla white, upper
lobes right and left horizontally and
a little ^{approaching} twistedwhite { ^{burnt} _{umber} }
"petal" (cor. lobes).No. 20,511. *Nemacladus*cor. white, lobes with
brownish back.No. 20,512. *Nemacladus*Upper lobes spreading
right and left horizontally to make
a gap on upper side. Corolla

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Valley mesa near Willow Springs
Canon, Old Dad mts. Apr. 30, 1941.white, the lobes tipped with a minute
yellow spot."No. 20,513. *Aster abatus* Blake

2-2½ ft. h.

"No. 20,514. *Coleogyne ramosissima*

Tom.

4-5 ft. h., 5 to

7 ft. broad.

= Stevens Reservoir.

Cattle Reservoir, east side Old Dad mts., near
Waterloo Wash, - Mohave Desert, Apr. 30, 1941.
cf. itinerary 61:11."No. 20,515. *Mimulus*. Of the *Mimulus**guttatus* alliance, = *M. guttatus* DC.*Haplopappus linearifolius*"No. 20,516. *Eriogonum*
var. *interior* (Cov.) Jones

Rays 10, 10, 11. Bush, broad, 16 to

22 inches high. Rocky slopes.

"No. 20,517. *Gilia latifolia* Gray (produced
form), ~~or~~ *Gilia sinuata* Dougl.
Cov. lavender."No. 20,517a. *Festuca reflexa* Buckl. Grass."No. 20,518. *Layia*

Rays pure white.

"No. 20,519. *Lotus humistratus* Greene

Quite prostrate.

"No. 20,520. *Juniperus*
(Put with 20,521)

Small trees 10 to 15

ft. high. Berries showing 2 seeds at
apex.Cattle Reservoir, east side Old Dad mts.,
Mohave Desert, Apr. 30, 1941,
near Waterloo Wash

Stevens

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"No. 20,521. *Juniperus californica*Berries seldom showing
seeds at apex. Young berries often
showing "seeds" at apex."No. 20,522. *Echeveria saxosa* Jones.
= DudleyaWaterloo Wash, Old Dad mts., Apr. 30, 1941.
cf. itinerary 61:11.

"No. 20,523.

This gnaphaloid about

a large rock-pile outcrop by Water-
loo Wash, in shade of rocks."No. 20,524. *Ellisia membranacea*

Nutt. Cor. white; stems

weak, trailing in shade of large
shrub. By Waterloo Wash."No. 20,525. *Melica imperfecta* Trin.

This grass in moist

flat along Waterloo Wash.

"No. 20,526. *Salvia* ^{Dorrii} ~~camosa~~ Dougl. ^{ssp.} ~~var.~~

argentea (Epling) Jepson. Waterloo Wash.

"No. 20,527. *Lupinus arizonicus* (Wats.) ^{Nutt.} ~~Wats.~~
anc. C. B. Wolf.
Cont. p. 498. Waterloo Wash."No. 20,528. *Forestiera neo-mexicana* Gray
Spreading bushes 8-10 ft. h.
Waterloo Wash.

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Snake Springs, Old Dad Mts.,
Mohave Desert, Apr. 30, 1941."No. 20,529. *Purshia glandulosa* Curson.
Bush, rounded, 6
ft. high."No. 20,530. *Cheilanthes covillei* Maxon
~~*Hotholaea parryi*~~acc. G. B. Wolf. This fern under rocks
at spring."No. 20,531. *Barax*"No. 20,532. *Salix*"No. 20,533. *Quercus chrysolepis*
Rounded-crown tree20 ft. h., 3 trunks from ground
7 to 10 in. diameter. In bottom of
cañon at Snake Spring.

— Leaving Waterloo Wash we pass
a point of a rocky spur running
easterly from the main mass of
Old Dad Mts., and following the
road northerly we soon come to
a side road running into base of
mountains where there is visible
a cabin. We follow (Cont. p. 493)

Three miles S. of sand dunes
near Kelso, Mohave Desert, Apr. 30
1941.

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"No. 20,534. *Larrea tridentata* var.
glutinosa. Leaves pathologically
yellow."No. 20,535. *Argemone* ~~*intermedia*~~
= A. corymbosa Greene
acc. G. B. Wolf."No. 20,536. *Chaenactis*

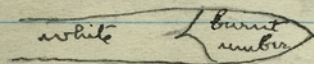
Wash.

— For other notes by G. B. Wolf see vol. 61, p. 9.

Neighborhood of Kelso Sand Dunes,
Mohave Desert, May 1, 1941. 2100 ft.

East end of the great dunes on the
stabilized low dunes, in sandy
wash."No. 20,537. *Festuca octoflora* var. *hispida*
This grass in scattered
tufts.No. 20,538. *Nemacladus*

Lower corolla-lobes white
with burnt madder upper half, some-
thing like this:



upper lobes white with light-
brown tips. Filaments (the lower
ones) spreading at base, arising

from within a low bowl-like disk,
the 2 short processes of the lower
portion of filament hooked
over the disk and bearing at end
5 transparent rods. Disk open or
incomplete on upper side - that is,
about $\frac{2}{3}$ complete. Upper lobes
linear-lanceolate, ascending!

"No. 20,539. ^{= Cryptantha} *Eremocarya micrantha*
Greene.

"No. 20,540. *Linanthus aureus*
Greene var. *decorus* (Gray).

Abundant on the lower slopes of
the Old Dad mesa, that is, near
Kelso Sand Dunes.

"No. 20,541. *Aster Machaeranthera*
canescens (Pursh) Gray. Rays lavender-
purple. In a stabilized sand-
dune.

"No. 20,542. *Rumex hymenosepalus*
Torr. Very rank, in the stabiliz-
ed dunes; in places, there are

on the stabilized dunes,
Desert.

c. 2100 ft.

S. Bernardino Co.

marked colonies of it.
"No. 20,543. *Astragalus lentiginosus*
var. *boegeanus* Corolla light-purple,
drying dark purple. Stabilized
sand-dune.

"No. 20,544. *Hilaria rigida* (Shurb.)
Benth. A very important sand-
finder. Collected on a stabilized
dune.

"No. 20,545. *Oryzopsis hymenoides*
Ricker. This Sand Bunch Grass
is common on the stabilized dunes.

"No. 20,546.

Rays yellow; disk yellow.

Sandy-gravelly wash.

"No. 20,547. *Cryptantha angustifolia* Greene. Sandy-gravelly wash.

"No. 20,548. *Eschscholtzia*
minutiflora Wats. Sandy-gravelly wash.

"No. 20,549. *Gilia davisii* Nels. Light-blue
corolla.

- No. 20,550. *Cryptantha dumetorum*
Greene. This borage has fleshy
calyces, the lobes of the calyx
teretish. Leaves ovate! Calyx-lobes
4; the upper one broader than the
others, and a little unarmed save for one short bristle
left; the 3 lower
slender, short-bristly. Gravelly-
sandy wash. (with a few
bristles.)
Upper lobe hispidulose.
Nutslets smooth.

- No. 20,551. *Eriogonum reniforme*
Torr. & Frem.
Sandy-gravelly wash.

- No. 20,552. *Achyrocnichia cooperi*
T. & G. Gravelly hill.

- No. 20,553. *Abronia*
Fls. deep pink.

Gravelly hill.

- No. 20,554.

Prostrate in the sand.

Raye none. In sandy wash.

- No. 20,555. *Rumex hymenosepalus*
Torr. Colonies of this in the
low or stabilized sand dunes.

- No. 20,556. *Proton californica* Mull. Arg.
Low rounded plants on
the dunes, semi-prostrate.

- No. 20,557. *Panicum urvilleanum*
Kunth. An important sand-
binder in the dunes.

- No. 20,558. *Goldenia palmeri* Gray.
Corolla pink.

(no. 20,544.)
— Three grasses on dunes here: *Hilaria*
rigida, *Panicum urvilleanum* and
Oryzopsis hymenoides (no. 20,557)
(no. 20,545) Here are
Larrea tridentata, *Transeria dum-*
osa and *Rumex hymenosepalus*.

- No. 20,559. *Mentzelia*
Stems 2, 3 or 4 from
a heavy perennial root. Outer
stamens very broadly petaloid;
some of them exerted between
the petals and standing outside

476

Function of wash from old
Kelso Sand Dunes, running

the petal circle. Petals yellow,
their backs brownish. Sandy wash.
"No. 20,560. *Sphaeralcea*

Sandy wash.

"No. 20,561. *Monolepis*

Sandy wash.

"No. 20,562. *Dithyrea californica*
Harr.

"No. 20,563. *Cryptantha pterocarya*
(Forr.) Greene. Sandy wash.

"No. 20,564. *Cryptantha angustifolia* Greene.

"No. 20,565. *Baileya*

Busby. Branching, 20 in.
high and 3½ feet broad. Rays
yellow.

"No. 20,566. *Sphaeralcea*

"No. 20,567. *Monolepis*

"No. 20,568. *Sphaeralcea*
(discarded. not in flower)

Dad Butte and the main wash from n. of
westerly. Mohave Desert, May 2, '41. 2000 ft. Near Kelso. 477

At this point the dunes are
stabilized or semi-stabilized but
a mile or so westward the mov-
ing dunes rise and continue for
six or eight miles, ^{* see p. 495.} maybe ten
miles. Dr. Wolf thinks they may
be eight hundred feet* high.
As seen from the high mesas
south (on road from Kelso to
Baker) they present an impos-
ing spectacle — they are
undefinable, weary, uncertain —
with strange ridges and waves
and hollows and curves and
sharp lines where a crest breaks.
There is, too, a sense of the
terrible or unpredictable
about them — that all barriers
in their path are futile and
hopeless.

* Thompson, D. G., Mohave Desert Region,
U. S. Geol. Survey, Water-Supply Paper, 578
page 551, estimated to be freely 500 ft. h.

- "No. 20,569. *Eriophyllum lanosum* Gray.
no fruits to receptacle. Rays white; disk
yellow. Sandy-rocky mesa.
Both ray and disk-achene with narrow lance-
scuminate paleae* and a shorter row of oblong
or linear paleae half as long. Rays 8. Cont. p. 488
"No. 20,570.

Rays purple, or whitish,
changing to purple.

- "No. 20,571. *Cryptantha nevadensis* Nels. & Ken.
"No. 20,572. *Cryptantha farbigera* Greene.

- "No. 20,573. *Nemacladus*
Cor. white, its lobes
subequal, the upper turned hori-
zontally right and left, leaving
a gap on upper side corolla.
Corolla campanulate.

- "No. 20,574. *Cryptantha depauper* H. & L.

- "No. 20,575. *Dalea*

* subulate paleae would be better. Receptacle
tapering or rounded convex.

- "No. 20,576. *Eucelia frutescens*

- "No. 20,577. *Oysodia cooperi* Gray.
Rays 4, livid red.

— On leaving Kelso, we take the Cimarron
road. The car just misses a rattlesnake
crossing the road. We stop the car,
go back, find him uninjured. Dr. Wolf
irritates him with rocks to make him
coil and assume a striking attitude in order
to use his camera on him. In all the attacks
made on him by Wolf, at this time and later,
the rattler at no time takes the offensive;
his attitude is purely defensive. Attacked
again and again he stands his ground;
does not try to run or sneak^{away}. He holds
millennally to his position, being so stung
up, for an hour, the period of our
stop while collecting. We return to Kelso.
2600 mi. dale 481

- "no. 20,578. *Gilia latiflora* Gray.
Corolla light blue, the
throat yellow, a dark purple band
between throat and the light-blue
lobes.

- "no. 20,579. *Linanthus aureus* (Nutt.)

Greene. On Kelso slope, but rather high.
See sub no. 20,580. c. 3000 ft.

- up. The var. *decorus* occurred on the
valley mesa between Aubrey and
Old Dad Mts. (Grants Mts. of maps),
say about $\frac{1}{3}$ way up mesa to
near Cove Springs. It occurs in great
abundance on the mesa in the open-
ings amongst the *Cercocarpus* bushes.
There is more white of this than
of any other species (cf. no. 20,368). After going on from this
valley mesa between Bristol Mts.
and Old Dad Mts. through the
pass between Old Dad Mts. and
Providence Mts., we come into

the direct route over the mount-
slopes, near or at all night camp.

The valley between Providence Mts.
and Old Dad Mts., a valley mesa
which slopes down towards
Kelso. The lower part of this slope
for miles is again covered with
Linanthus aureus var. *decorus* (cf.
no. 20,540) down to the sand dunes.

In the lower part of this valley it
does not occur. ^{(Continued from p. 479.}
We take the Baker
at bottom.

road from Kelso, direct over the
mountains and on the ascending
slope are miles of this white-
flowered variety. ^{(no. 20,580).} Higher up the
note changes completely to the yellow
-flowered form, *Linanthus aureus*
(Nutt.). ^{in Lake Mead county (20,574) it comes again.}
Before I saw no
no. 20,579. We pass over summit and
much of this, yellow for miles are
the mesas and stretching right and
left over the thinly brushed mesa.
Moreover, unlike the Aubrey plain,
the *Linanthus* is almost the
only annual species, other
species occurring in few indi-

Between Kelso and Baker by the
Mohave Desert, May 1, 1941,
c. 2800 ft. Individuals, if any. This yellow color
continues for some miles. Then,
we pass through the pass in the
mountains and on the Baker
slope we find again the white-
flowered species, var. decorus
- miles of it (no. 20,580)

"No. 20,580. *Linanthus aureus*
var. decorus (Gray) ^{This} ^{Tolson.}
occurs in great areas on the
slope above Kelso on the direct
route to Baker over the mountains.
At last high up, the ^{color} ^{note} changes
to yellow, *L. aureus* (no. 20,579).

"No. 20,581. *Linanthus densus*
- With 20,579.

"No. 20,582. *Langloisia punctata*
Greene Goodding With 20,579.

"No. 20,583. *Gilia biflorus* Parry.
With no. 20,580. Cor. yellow.

direct route over the mountain,
- Kelso slope, near or at night camp
San Bern. Co. 2800 ft.

"No. 20,584. *Nemacladus*

Corolla - lobes sub-
equal, white, the 3 lower lobes
with a distinct burnt umbr
spot at tip. Lower lobes ovate,
acute. Filaments on lower side of
flower spaced between 3 glands.
Two upper lobes oblong, obliquely
incurved at tips, the tips conniv-
ent, the stamen-column borne
outside or ^{standing} behind these upper
lobes!! With no. 20,579.

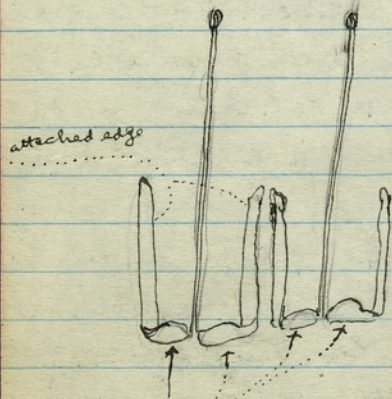
"No. 20,585. *Nemacladus*.

Cor. campanulate,
its lobes subequal, the two upper
spreading horizontally right and
left, leaving a "gap" on upper
side of corolla. Corolla white.

"No. 20,586. *Gilia* ^{transmontana} ~~sumata Dougl.~~
(Mason + Grant) A. V. Grant
With 20,584.

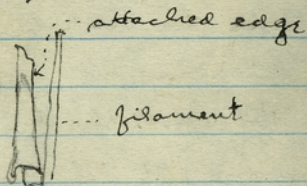
Return Kelso and Baker, by the direct route over the mountains,
Kelso slope, at night camp, - Mohave Desert, May 1, 1941.
c. 2800 ft.

"No. 20,587. *Phacelia distans* Bth."



This is exactly the
P. distans
type of
scale.

Cupped scale, that is rounded
convex above and concave below,
its lateral edge continued
upwards as a linear plate
attached to cor-tube by one
edge, and with a free point
at apex.



Tubersely cupped portion.

Cor. purple.

"No. 20,588. *Chaenactis*

slut bushes.

"No. 20,589. *Malacothrix californica*
var. *glabrata* Eaton.

Protection of creosote
and other bushes.

- Quite fine flowering of many
things on the upper mesas.

We pull off the road a few yards
and pass the night. This is at
a point perhaps 2 or 3 miles
from the rocky pass near sum-
mit - we enter next morning.
For convenience I am calling
the mountains ahead of us, the
Kelso Mountains.
see notes 61:9, 12.

* Cont. from p. 477. Thompson (cf. bot-
tom of p. 477) says "cover at least
10 or 15 sq. m.", l.c. p. 551.

486

Between Kelso and Baker, on direct
route over the mts., in the "pass", at
nearly highest point, - Mohave Desert, May 2, 1941.
c. 2600 ft. Kelso mts.

"No. 20,590. *Penstemon* *emarginatus* 1941.
Rocky wall.

"No. 20,591. *Eucalia* *farnosa*

Rocky wall.

"No. 20,592. *Eucalia* *frutescens*

Rocky wash.

"No. 20,593. *Psoralea* *juncea* (Bth.)

Greens. Central receptacle bracts
lanceolate-pennate. Base of
rocky wall. Stems a light but
rather vivid green.

- As we come out of the "pass" (see
above) on to the high mesas, there opens
up below a huge scene - the vast deep
hollows of Soda Lake and Silver Lake,
the buttes and low broken ranges scattered
over the mesas below, the huge
desert ranges rising in fine defiance
all around. The car stops. We collect
some plants and then I turn
to Dr. Wolf and exclaim, as
an attempt is made to take in
the awful desert scene, for-
bidding and hopeless, "Color-
ful!" See, 61:13.

487

Between Kelso and Baker, on the direct
route through the mountains,
Baker slope, - Mohave Desert,
May 2, 1941. c. 3300 ft. Kelso mts.

"No. 20,594. *Linanthus* *aureus* (Nutt.)

Great yellow expanse of the flow-
ering of this, 4 or 5 miles by
4 or 5 miles wide, the stand
of Creosote Bush rather open, so
that the color shows well. In
high country, not far from summit
Sandy mesa. See p. 481.

"No. 20,595. *Linanthus* *aureus*
(Nutt.) var. *decorus* (Gray). Further
down the mesa on Baker slope
(cf. no. 20,594), *L. aureus* is re-
placed by the var. *decorus*, -
several miles of this, - abun-
dant. c. 2500 ft.

"No. 20,596. *Argemone* *corymbosa*
c. 2000 ft. Wash. st. of Baker.
Greene

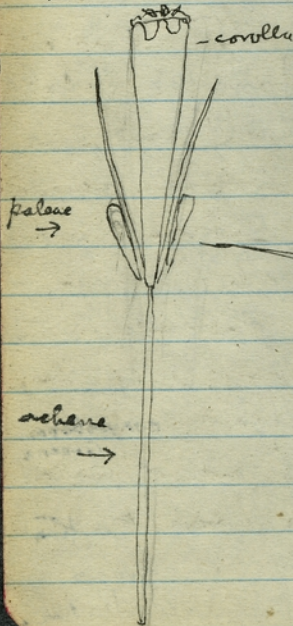
- We collect no more after
getting down to the lower
mesas and run into Baker.

a considerable road station for autos, not only on overland route but on the Death Valley road which branches off here. On the largest gasoline station is the sign of "Dad" Fairbanks, an old-timer in Death Valley. See my correspondence with him in the 1940 file. From Baker we run - *Linanthus aureus* Greene. Cronese Valley.

- Cont. 20, 569.

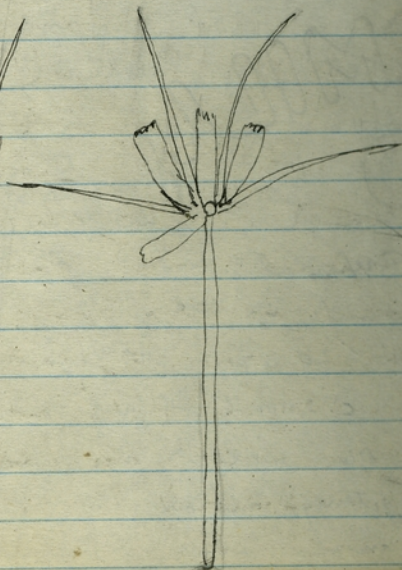
In "B" diagram, the subulate paleae are 4, the oblong paleae (toothed at apex finely) are 4 and alternate and $\frac{1}{2}$ as long.

A.



B.

Pappus spread apart.



to Yermo. At the Anaranating Station an officer recognizes the Rancho Santa Ana Botanic Garden car and waves us through. At Daggett I go to Van Dyke ranch and Dr. Wolf goes on back to Orange County.

- Cont. from top p. 495; no. 20, 578.

Psoralea castorea Wats. Keel

short and broad (quadrilateral), black-purple

$\frac{1}{2}$ as long as wings, the wings a little shorter than banner.

^{a squalling or} banner oblong, rounded at apex

and cupped a bit at apex, the lower troughed part with a bulbous distension on each side (on upper side). Calyx-lobes lying behind banner 4, long-subulate; fifth calyx-lobe on lower side of flower, supporting banner, obovate, obtuse, markedly concave ^{or cupped at apex} on upper side. Corolla greenish-white, the upper part purple-marked.

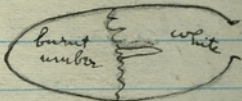
- Cont. from p. 435 near top. The union proved in the end only a one-sided success. Buel Frank was strongly given to wine, women and whiskey. He had a mine somewhere out near Ludlow. One day, four or five years ago, unusually drunk, he started in a pick-up truck for Ludlow. An attempt was made at Daggett to have him sleep over a night because he was so drunk. But he went off anyway. Somewhere east on the highway, towards Ludlow, he ran into an automobile. All persons were killed, three in the other car. Frank was badly injured but not killed outright. Taken to the San Bernardino hospital he died in an hour without regaining consciousness. Helen, his wife, worshipped him. He was

May 3, 1941.

older than she. They had four sons. When Helen Frank got her share of the Minn estate on John Minn's death (Minn was wealthy) she built a rather expensive residence here in the river bottom not far from the Van Dyke house. Evidently there was no thrift in the Frank household, because the place was at last sold under sheriff's foreclosure. Buel Frank never paid a debt that he could avoid paying; but after his death, his sons or some of them continued to work the mine at Ludlow and paid off all indebtedness. None of the family are now in this vicinity - Mrs. Frank and one or two of the sons are in the Los Angeles region. The sons have moved in court to change their name from Frank to Minn.

No. 20,597. *Hemiacidus*
Three lower corolla-lobes
white with burnt-umber upper
half.

Corolla-lobes:



Filaments on lower side free
at base and spaced between three
large glands on lower side. No
glands on upper side. Processes
on filaments (near base) short, each
bearing 6 transparent rods.
Stamen-column curved upward
and outward, standing behind
the oblong-acute lobes of upper
lip, there usually connivent at
tip, the upper $\frac{1}{3}$ brownish, the
rest white. Being connivent they
stand, as implied, in the front
of the stamen-column. Sta-

May 4, 1941.

men-column; anthers after dehiscence valvately-rotate about and below the stigma, the cells open upwards.

— *Linanthus breviculus* Greene.
Occurs this season in great
stretches of color about Old
Mountain nec. to Mary Beal.

— Cont. from p. 470 at bottom, into the
side road to the
cabin which is found built with
marked taste for comfortable living.
A resident is here — pleasant spoken,
familiar with the immediate region,
much but by age, much wrinkled,
plainly but neatly and cleanly
dressed in working clothes. He
says 18 inches of rain fell at
this point this last winter.
We leave this cabin and go around
a point perhaps $\frac{1}{4}$ mile away to
Snake Spring. (See p. 470). Cont. p. 495.

- Two visitors come to the Mary Beal cabin and I entertain them in Miss Beal's absence, namely: a girl,

Tommy Joe Pence

1750 51st Place

Los Angeles Cal.

- and a man,

Arthur B. Borden

9626 W. Olympic Blvd.

Beverly Hills Cal.

- *Linanthus brevicornis* Greene. "killed of it on old mtn. this season," says Mary Beal

- Cont. from p. 465 at bottom. along the lower south slope. Suddenly I jumped back, instantaneously, before my mind realized anything was wrong. I had nearly stepped on a huge rather 4 feet long, probably 8 inches around at the thickest part, a broad flat head and the longest fungus I ever saw. After this initial jump-back which was no more than avoidance of stepping on him, it seemed when

(Cont. p. 496)

No. 20,548. *Psoralea costorea* Wats.
Stem one, short (about 1 to 1 1/4^{or 2} inches long), bearing many peduncles in the axils of the thickly set long-peduncled leaves. (Cont. p. 489).

✓ No. 20,549. *Hesperocallis undulata* Wats. Sandy flat.

[Also observed 2 or 3 miles of plants in fl. near Laric.] of above species. 20,549,

Cont. from p. 493 at bottom. From Snake Spring we follow a wagon trail to mouth of Cottonwood (Cottonwood Spr. being up the cañon) Cañon, where we find a fence and a locked gate. The locked gate belongs to the settler Banner, whose place we can see miles across the mesa alongside a spur of the Providence Mts. Jan. Easterly. We return to the main wagon trail running towards Kelso and continue on it northerly to the Kelso Sand Dunes, see p. 471, middle of page.

496

Daggett, Mohave Desert,
May 4, 1941.

- no. 20,600. *Gouldenia palmeri*
Gray. Stamens: 3 longer than
the other 2 a little, inserted at or
very near base of corolla-tube, the
2 shorter stamens inserted a
bit lower possibly than the other
3;
no. 20,601. *Eschscholtzia* ^{*glyptoseris* Greene}
^{*Herveya* glauca,}
in a close basal tuft.

-Cont. from bottom p. 494. conscious
action came into play and it seemed
an age before I could get back
well out of reach. My attitude
towards him was purely one of
safety for myself. I did not
attack. I got out of the way
of him. The snake, not being
stirred up or irritated or riled
or harassed, went undisturbedly
on about his business, word
on, without any further refer-
ence to me. Compare the snake
behavior noted on p. 479. (Cont. 61:11)

Hinkley, Mohave Desert, May 5, 1941.

497

- no. 20,602. *Phacelia distans* Bkr.
no. 20,603. *Gilia* ^{*sinuata* Dougl.} ~~*sinuata* (Dougl.)~~ ^{*sinuata* (Dougl.)}

no. 20,604.

This inloid in sandy flat.

- no. 20,605. *Gilia* ^{*dasy* Muhl.} ~~*laciflora* Gray ssp. *laciflora*~~ (See p. 499.)

-Cont. from bottom p. 455. and he
found a treasure house for his
field work in using my Man-
ual. It was a wonderful book,
he said, to have. It contained,
for him, at that time, every-
thing. He revelled in the use
of it. "Still," says Wolf, "even
where names have been chang-
ed by revisions, my memory
sticks first to the names in
Jepson's Manual. I find my-
self using the old names, the
names I first learned. Munn
told me that he, too, tended
to remember the names he
first learned from Jepson's Manual."

No. 20,606. *Phacelia*No. 20,607. *Linanthus*
parryae (Gray) Greene

- *Lupinus arizonicus* Cont. from
page 469, no. 20,527 upper calyx
lip deeply cleft; lower calyx
lip minutely 3-toothed at apex.
Keel quite glabrous!!

- *Pentstemon* (Cont. 20,401). Another com-
pletely delircent from apex to base,
confluent and explanate.

- Mary Beal says: *Eschecholtzia*
californica has appeared here at
Daggett in a wheat field, the
seed wheat having come from
Antelope Valley. Cont. from p. 435.

- Mary Beal has an *Agave* in
Providence Mts., red fls., which
must be followed up as hav-
ing some interest.

No. 20,608. *Lycium cooperi* Gray.
Bush 14 feet broad and 5 feet
high.

- Cont. from p. 497, no. 20,605. This
is an intergrade to *L. tenui-*
flora var. *latiflora* Gray.

- Cont. from bottom p. 447. After
the Council Meeting we attended
a lecture in the lecture hall by
Dr. C. B. Wolf on cacti, given
for the benefit of day visitors
to the garden - it being vis-
itors day. It was a peaceful
time for us - no duties, no obli-
gations - no one saw the staff
and councilors knew I was there.
But after the lecture a little
procession of visitors lined up
to get my autograph - and
I signed them as well as I
could. See my letter to C. B.
Wolf, May 10, 1941, Jepson
Correspondence.

500

San Joaquin Valley, May 5, 1941
at Edison, Kern Co.

No. 20,609. *Gilia* <sup>*tricolor* Benth.
ssp. diffusa (Congd.) Mason & Grant</sup>
 Cor. - lobes whitish

with pink tips. Throat yellow,
 with 2 purple dots in upper
 part beneath each lobe, or
 the pairs of purple dots
 merging into one.

San Joaquin Valley, at Berend,
Madera County, May 5, 1941.

No. 20,610. *Mimulus tricolor*
 Bth. Rain pools.

- *Aquilegia lobata*. See vol. 61, p. 4.

No. 20,611. *Baeria*

Beds of former
 rain pools, making ten to
 thirty feet medallions of gold.

- Went to San Jose by special
 invitation to attend Eighth Western
 Shade Tree Conference, May 16, 1941.
 See copy of my speech at banquet
 in file ("Without the Gates".

Meadow Valley and Quincy

- Dr. Percy M. Barr, Forest School.
- Geo. Jenkins, handy man, " "
- Philip Joranson, asst, " "
- Supervisor Rogers, Plumas Forest.
- Oscar M. Evans, " "

Yreka

- Supervisor William Jones, Klamath Forest.

Visalia

- Harvey Hotel. \$1⁰⁰ up. Free parking.

Rancho Santa Ana

- Dr. C. B. Wolf
- Mr. Everett
- E. G. Johnson, Supt. of Ranch.

Bakersfield

- His Place, opp. Southern Hotel,
 probably best eating place.
- Southern Hotel, rooms \$1⁰⁰ up.

Hotels:

Sacramento: Golden Eagle \$1.00
Mark Twain ..

Fullerton. de Luxe. \$1.00 Park \$1.00

Santa Ana. Finley. \$1.00.

Anaheim: Valencia \$1.50 Pleasant 1.00

Bakersfield: Taylor, 1.50 'Kassara 1.50
+ Southern, 1.50

Fresno: Hughes, \$1.00 Mayer, .50 to
Sierra \$1.00.

Redding: Golden Eagle 1.50 Loring 1.50

Red Bluff: Red Bluff, 1.00 Tremont 1.50

Santa Barbara: Hotel Building, 1.00,
on East Haley st., where I
stopped for repair at garage
next door in Apr., 1939.

Hotel Virginia, 1.00, West Haley st.,

Hotel Neal, 1.00, within a block
of Hotel Virginia, but on State
st., - looks attractive, Jewell
Hotel, \$1.00. (Hotel Neal too near rail)

Ventura. I stop at Hotel Hoover (clean
room, good linen, toilet and shower
bath and running water, \$1.50
but I judge Hotel Clark, Main
st., \$1.00 would have been better.
The best would be Hotel Ventura,
\$1.50

- San Luis Obispo. Paul Perriotti's Hotel
Atascadero. Hotel Atascadero. \$1.00
"free garage".

Los Angeles. Hotel La Torca.

with rates. 339 S. Figueroa st., L. A.
\$1.00. "Ample parking."

Field Memoranda

- Kate E. Gearhart, Oak Grove road sta.
- Mr. Mrs. B. F. Duff, 1406 N. Harris, Hayford.
- Frank Bascom, Densmore. (Washing Spence)
- Pomona College. Nemadactyl glauca. Jepson 8766. Is it my label in my hand?

- Mrs. Yarbrough, "stones" from
from Red Rock Cañon.

- Martha S. Vail, Mohave
(correspondent Elizabeth Morse).

- Redding, Hotel Loring, \$1.50

- Roseburg, Ore. Hotel Rose. \$1.50

- Kerr, Mark. Mazurka Cañon, Inyo Co.,
a collecting place.
Mrs. Assoc., Court House, Independence,
P. O. Box 187.

- County Sept. Agr. Bldg., Stockton; botanist in
charge of weed control.

- Voegelien, E. W., prob. Waldon.

- Mrs. Martenson, 347 Hazel st., Chico.
p. 780, Jepson Corr.

- Hotels in Santa Barbara. cf. vol. 41,
p. 780, Jepson Corr.
- Fine, Mr. and Mrs. Burchard, almost west
of place where Coos Hot Sp. road leaves
Bishop highway, i.e. about 2 to 3 mi. N. of
Dunsmuir. (Mrs. C. H. Smith).

- E. S. Whitaker, State Highway Division,
Dept. Public Works, Sacramento.

- Mrs. Elizabeth Cade, 3525 - 7th Ave., San
Diego.

- Mr. R. A. Wilson, Warden, Point Lobos Reserve,
W. W. Lyman, 2762 Woodshire
Drive, Hollywood.

- E. W. Voegelien, Waldon.

- M. B. Pratt. Map of Mendocino Co.
- Rancho Santa Ana Botanic Garden
Lacking: leaflets 12 to 25 incl.



~~2750~~ Trip to Coyote Cañon, Apr. 7-19, 1902

Apr. 7. Monday. Left Riverside for Hemet via Winchester. On the plains the flowers are as thick as I have ever seen them but they are scarce in the hills.

Apr. 8. Crossed over San Jacinto Mt. to Thomas Valley and Hamilton. The only flowers seen above 4200 ft. were a few *Nemophilas*.

Apr. 9. Via Terrilliger and down Coyote Cañon to flat near small rocky hill; flowers few.

Apr. 10. To Edminston's camp and then to Ebben's, 9:30 A.M. lay over.

" 11 Collected on down the cañon & back

" 12 Went up the cañon and toward Haystack Mt. to mine.

13 Sunday. 14 Monday, Left Ebben's, going up the cañon to Hamilton's 15 Examined the Parry Piñons above

16 Hamilton's, taking measurements, fotos etc. In P.M. went horse back to Strawberry and camped at my old camp of 1901.

16 Climbed Tahquity Peak, riding until snow stopped the horse, near base of main peak. Examined the peculiar form of Sugar Pine & the *P. flexilis*, taking fotos, measurements & and a flour sack of cones. 17 Rode back to Hamilton's, after sending cones &

specimens by express (via Hemet Stage) to Berkeley. P.M. cleaned up press

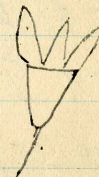
18. Drove down the Coahuila Valley to the Thompson Ranch and then across the hills and past Sage to Diamond Valley where I camped (without water) at a deserted ranch. The hills above Sage were one mass of bloom. The flowers were never more plentiful and reminded me of the south side of Juniper Hill, back of Winchester in the spring of.

19. After chasing a mile through the fog for Selim, who had left me for a young barley patch - forsaken me for greener pastures - I drove on into Hemet and then to Winchester, where some of the interesting *Gilias*, *Oenotheras* and so forth were put up, and on to Davis and Riverside

2750 *Echinocystis*

Box Spr. Grade. Apr. 7. 1902

Cor. tube funnel form or turbinate, lobes ascending, thus making whole cor. somewhat bell-shaped; when old the lobes are horizontal. Frt. + fl. sent to Berk. but frt. from separate plant from which few fl. sent. Cor. white.



2751 *Scrophularia Californica* Grade -

Lower lvs. green; upper etiolated; mostly green along midrib and on tips of lobes (margins), some nearly pure white, resembling bleached celery. On n.-w. side of high rocks, but other plants near by were normal.

2752 *Baeria gracilis* (DC.) Gray. Along grade

2753 *Baeria gracilis* (DC.) G. Several places Box Spr. to Alessandro. Largest grew in low place and smallest are from higher roll a few ft. away. gradation.

2754 *Calandrinia* Alessandro. ^{see note below}

2755 *Oenothera strigulosa* T. & G. "grain fields"

2754. Stamens, 30 fl. had 6 sta. ea., 4 had 7, 4 had 8, 2 had 9. 6 and 8 stamened fl. on same plant. Style usually, perhaps always, 3- ptd.

San Bernardino Mts. 1906.

On July 13 Frank M. Hall and myself drove the mules from Riverside to Skinner's (now Harve's) in Mill Creek Cañon. The next day we crossed over to the Santa Ana Cañon and a day or so later made main camp at a meadow along the river at 6200 ft. alt. until about July 27. Side trips were taken to South Fork Meadows, Coon Creek, Sugarloaf, Bluff Lake and Bear Valley, etc. A second main camp was made at junction of So. Fk. and Dollar Creek, at 8200 ft. alt., additions to our party being Geo. R., Saml G., and Alton Hall. Side trips were taken down to Big Meadow and up to Grayback, etc. About Aug. 7 we broke camp and went back to Riverside.

Sugarloaf Peak (San Bernardino Mts.)

Ascent was made from opposite our camp in cañon bottom at 6200 ft. Camp is in Transition but south slope of Sugarloaf (north side of cañon) is Upper Sonoran for some distance. Upper Sonoran species are: (+ = dropout at Transition, the others continuing)

Artemisia tridentata dominant +

Cercocarpus betulaeifolius +

Eriodictyon Californicum +

Lupinus albifrons

Eriogonum W. ^{sub} *scapoenum*

Mimulus brevipes +

Antirrhinum Coulteri +

Pinus monophylla + Dominant in places

Ceanothus perplexus " " "

Salvia Columbariae +

Opuntia basilaris +

Stephanomeria virgata +

Eriophyllum confertiflorum +

Chaenactis pl. *tennifolia* +

Chrysothamnus n. graveolens

Arctostaphylos tomentosa +

Transition zone begins with:

Pedicularis semibarbata

Orthocarpus pilosus

Tetradymia canescens

Monardella Palmeri?

Viola purpurea pinetorum

Sarcodes sanguinea, scattering

Abies concolor "

Cercocarpus ledifolius

Ceanothus cordulatus

Pinus ponderosa dominant.

Soon follow: - *Euphorbia Palmeri*, *Erysimum asperum*,

Silene verecunda, *Libocedrus decurrens*, *Carduus*

c. Bernardinus, *Castilleja latiflora*?

At 9000 ft. on this south slope are: *Lewisia rediviva*,